REPORT RESUMES

ED 003 029   24
COGNITIVE PROCESSES IN CAREER DECISION-MAKING.
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REPORT NUMBER CRP-1046   PUB DATE   62
EDRS PRICE MF-$0.54 HC-$14.76   369P.

DESCRIPTORS- *LONGITUDINAL STUDIES, *CAREER CHOICE, ASPIRATION, CAREER PLANNING, OCCUPATIONAL CHOICE, PERSONAL INTERESTS, COLLEGE STUDENTS, STUDENT INTERESTS, QUESTIONNAIRES, *VALUES, PERSONAL VALUES, GRADUATE SURVEYS, *DECISION MAKING SKILLS, COGNITIVE PROCESSES, PITTSBURGH, PENNSYLVANIA, OSGOOD'S SEMANTIC DIFFERENTIAL TEST, ALLPORT VERNON LINDZEY STUDY OF VALUES, GHISELLI'S SELF DESCRIPTION INVENTORY

THE PROBLEM OF THIS LONGITUDINAL STUDY WAS TO IDENTIFY THE COGNITIVE PROCESSES WHICH ARE INVOLVED IN CAREER DECISION-MAKING AND THE LONG-TERM EFFECTS OF THESE PROCESSES ON CAREER DEVELOPMENT. AREAS OF CONCERN WERE (1) IDENTIFICATION OF STRATEGIES BY WHICH AN INDIVIDUAL CAN OVERCOME DECISION-MAKING DIFFICULTY, (2) ASSESSMENT OF THE SHORT-TERM EFFECTS OF DIFFERENT CAUSES OF INDECISION ON CAREER DEVELOPMENT, AND (3) THE PREDICTION OF LONG-TERM EFFECTS OF INDECISION ON THE STABILITY OF OCCUPATIONAL ROLE ACCEPTANCE. THE WORK WAS IN TWO PHASES. PHASE 1 CONSISTED OF A SERIES OF TEST ADMINISTRATIONS AND RECORDED INTERVIEWS WITH 30 UNIVERSITY STUDENTS IN THEIR LAST YEAR OF FORMAL EDUCATION. IN PHASE 2, TWO DIFFERENT SAMPLES OF GRADUATE STUDENTS WERE GIVEN A LONG PERSONAL HISTORY QUESTIONNAIRE. THE FIRST SAMPLE PROVIDED A PRETEST OF THE QUESTIONNAIRE AND THE SECOND SAMPLE TESTED HYPOTHESES FROM THE FIRST. RESULTS OF PHASE 1 SHOWED THAT THE SUBJECTS WERE QUITE INDEFINITE ABOUT OCCUPATIONAL PLANS, EVEN AT THE END OF THE ACADEMIC YEAR. SYSTEMATIC CHANGES IN PERSONAL VALUES OCCURRED OVER THE YEAR. THE CLEAREST CONCLUSION DRAWN FROM PHASE 2 WAS THAT THOSE GRADUATE STUDENTS WHO PLAN TO CONTINUE STUDY FOR THE PH.D. MUST BE TREATED SEPARATELY FROM THOSE WHO PLAN TO STOP WITH THE M.S. DEGREE. IMPLICATIONS OF THE RESEARCH FINDINGS ARE PRESENTED. (JC)

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COGNITIVE PROCESSES IN CAREER DECISION-MAKING

Cooperative Research Project No. 1046

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1962

The research reported herein was supported by the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education and Welfare.

ED003029

Acknowledgments

As with all research, this study did not grow out of a vacuum. It originated in the research on the admissions process and the educational program of the Graduate School of Industrial Administration, Carnegie Institute of Technology, conducted by the chief investigator and supported entirely by the Graduate School. The chief investigator is indebted to the former dean, G. L. Bach, and to W. R. Dill, presently associate dean, for their interest and assistance.

The investigators wish to express their appreciation to Shirley Zarenko and Ethel S. Blank, who provided expert secretarial assistance during the early phases of the research, to Barbara A. Bross who served with distinction as an undergraduate assistant, to L. Barton Alexander and John Williams, who provided technical assistance, and especially to JoAnn DiNucci who typed the final draft of this report.

Table of Contents

Chapter | Page

Part 1

1. Introduction 1

Part 2

Phase I: The Case Studies

2. Selection, Testing, and General Description of Phase I Subjects 13

3. A Theoretical Model of Career Decision-Making 35

4. Career Decision-Making and Personal Values 53

5. A Measure of Subjective Indecision 75

6. George Jenkins - A Case Study in Career Decision-Making 99

Part 3

Phase II: The Panel Study

7. The Changing Career Plans of Students of Industrial Administration 167

Part 4

8. Summary and Conclusions 195

Bibliography 215

Appendix Page

A. Letters Sent to Prospective Subjects 223

B. Interview Schedules and Questions 227

C. Coding Manual for Subjective Indecision 235

D. Scoring Samples 249

E. Personal History Questionnaires 269

F. Results of the Personal History Questionnaires Given to the GSIA Class of 1963 (Phase II) 295

G. Other Instruments Used 355

List of Tables

Table Page

1 Characteristics of Subjects 20

2 How Subjects Describe Their Momentary Plans 21

3 Interest in Various Kinds of Job Responsibility 22

4 Amount of "Conscious" Career Planning Subject Engaged In 24

5 Nature of Career Decision-Making 25

6 Feelings About Current Career Choice when Choice Was First Made 26

7 Present Feelings About Current Choice 26

8 How Subject Would Like to Regard Current Career Choice. 28

9 How Subject Regards Career Decision, "Realistically" . 28

10 Importance of Parents' Wishes 29

11 Importance of Certain Job Characteristics, Averaged for Each Group 30

12 Mean Scores and Standard Deviations Averaged Over Seven Administrations of the Six Scales of the Study of Values 59

13 Mean Scores of Theoretical, Economic and Aesthetic Scales of Study of Values for Each Administration, Grouped by School 61

14 Mean Scores of Social, Political and Religious Scales of Study of Values for Each Administration, Grouped by School 62

15 Standard Deviations of Scores of Theoretical, Economic and Aesthetic Scales of Study of Values for Each Administration, Grouped by School 63

Table Page

16 Standard Deviations of Scores of Social, Political and Religious Scales of *Study of Values* for Each Administration, Grouped by School 64

17 Summary Table of *F* Ratios from Trend Analysis of *Study of Values* Scales 65

18 Summary of the Analysis of the Trends of the Mean Variances of Individual Scores 67

19 Repeat Reliability Coefficients for the Six Scales of the *Study of Values* 69

20 Rater Reliability, Composite Indecision (I_c) 86

21 Individual and Mean I_c Scores by Colleges
  Engineering and Science 89
  Industrial Administration 90
  Margaret Morrison 91

22 I_c vs. Number of Pages 92

23 "Career Pages" vs. Total Pages 93

24 Trend Analysis, Composite Indecision 94

25 How Subjects Said They Would "Like to" Regard Decisions 176

26 How Subjects Regarded Their Decision "Realistically" . 176

27 Number of Persons Who Encouraged Subjects 178

28 Per Cent of Subjects Taking a Favorable View of Specific Opportunities 185

29 Opportunities Considered Most Important 186

30 Opportunities Considered Second Most Important 186

31 Proportion Quite or Highly Interested in Supervisory or Advisory Work 189

Table Page

32 Proportion Quite or Highly Interested in Sales or Service Work 189

33 Proportion Quite or Highly Interested in Research or Teaching 190

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List of Figures

Figure Page

1 Flow Chart of Career Decision-Making 45

2 Means on Political, Economic, Religious, Social, Theoretical and Aesthetic Scales for Total Group (N = 30) 66

3 Growth in the Average of Variances of Each Subject's Scores on the Six Scales of the Study of Values, for Each Administration (N = 30) 68

4 Means of I_c Scores for Each Interview by Sub-Group . . 88

Part I, Chapter 1

Introduction

Some men choose a goal early in their lives and pursue it with vigor and enthusiasm. Others spend their lives floundering in conflict. When the latter might have become great teachers, productive scientists, or leaders in industry, the loss is great. The research described in this report concerns the processes which enable some men to realize their potential while others consume their energies in indecision.

The chief investigator started this line of research in 1954 at the Harvard Graduate School of Education, the subjects being students preparing to teach. All were highly selected for admission to the school. Some accepted the teaching role and remained in teaching. Others, however, either withdrew prior to graduation or never sought positions as teachers.

McClelland's adaptation of the Thematic Apperception Test, the Strong Vocational Interest Test, and a questionnaire examination of commitment and values were used as predictors. It was found that these instruments accounted for only a small part of the variance in the careers of the teachers in the sample. In retrospect, it is concluded from these studies that:

(1) Career development is such a complex multivariate process that linear combinations of scores derived from conventional tests are not likely to predict long-term commitment to a career accurately.

(2) The key to understanding career development lies in understanding the cumulative effect of separate career decisions, and the influence of a person's successive experiences—particularly social interactions—on these decisions.

(3) Career decision-making is basicly a problem in complex information processing.

At Carnegie Tech in 1956 the work was resumed with students of the Graduate School of Industrial Administration (GSIA) as the subjects. This group also had been highly selected. But again, examination of the measured interests and personality traits of the men provided few insights into their differing role performance and occupational commitment. Lengthy interviews and questionnaires, however, pointed to a crucial variable: the nature of the career decision-making of each man. All of them had at one or more times been in conflict about their future. Their success in resolving these conflicts appeared to make a critical difference in their work--the difference between ineffectual constraint at one extreme and purposeful enthusiasm at the other. Thus this study was undertaken, with the general objective of identifying the cognitive processes which are involved in career decision-making and the effects of these processes on career development.

Orientation and Objectives

The general theoretical orientation of this work was that of the research in complex information processing conducted by Simon, Newell, and others at the Carnegie Institute of Technology (Newell, Shaw, & Simon, 1957; Simon, 1955). In this orientation, attention is focused on the way in which the human decision-maker scans the environment for information, on the way he sorts, selects, stores and retrieves information, on the heuristics he adopts for choosing among behavioral alternatives and for transactions with the environment.

The chief investigator recently conducted an exploratory study based on the complex information processing orientation, and proposed that to this orientation be added the concept that the primary motivation of individuals in processing occupational information and in choosing among career alternatives is to maintain a low level of cognitive dissonance. A tentative model of the cognitive processes in career decision-making was formulated. In the present study this tentative model was extensively developed and partially tested. It is described in full in Chapter 3.

In accordance with this model, career decision-making is initiated whenever an input from the environment (e.g., a job offer, new information, a demand, a rejection) increases dissonance to an intolerable level at which point the person either revamps his beliefs about himself and the environment or searches for behavioral alternatives. Indecision can be seen as continual failure to reduce dissonance. Therefore the strategies by means of which dissonance is reduced and the short- and long-term effects of different strategies become of major interest.

In proceeding toward the development, testing and refinement of the model, attention was given to the various components of the model, such as the strategies for reducing dissonance. This work was conducted in two phases, the first consisting of intensive study over eight month's time of the career decision-making of 30 university students in their last year of formal education, and the second a panel study of the decision-making of a somewhat larger sample of graduate students.

Originally a third phase was planned. This was to have been a follow-up study of 300 graduate students in education whom the chief investigator first studied in 1954 (Hilton, 1955; 1960). This third phase was postponed indefinitely, however, as a result of the chief investigator's leaving Carnegie Institute of Technology in order to accept a position at Educational Testing Service, Princeton, New Jersey.

In each phase certain specific objectives were sought to further the general objective described above:

Phase I: (Case studies) To identify strategies by which an individual can overcome decision-making difficulty.

Phase II: (Panel study) To identify short term effects of different causes of indecision and different strategies on career development.

Related Research

Career development has been studied extensively, as will be briefly noted here and more fully in Chapter 3. Super and Bachrach (1956) have distinguished three major theoretical approaches in the current occupational research. The first, trait and factor theory, concentrates largely on individual differences in aptitudes, interests, achievement, and personality traits. E. K. Strong, Jr. (1943) has shown that interests are relatively stable over time. Hilton, however, found that single traits, including the appropriate Strong scores, did not predict commitment to teaching (Levin, Hilton & Leiderman, 1957). Recently Rosenberg (1957) has demonstrated the important role of values in occupational choice and, in addition, has described the social determination of choices and values, thus tying together trait theory and the second major approach, social systems theory.

In the tradition of social systems theory, Warner and Abegglen (1955) have, for example, shown that a disproportionately high number of major business executives were the sons of business leaders. The third approach, personality theory, stresses "the personality structure of the individual and its dynamic development as determinants of vocational development." In this area, Ginzberg and his associates found that the process of occupational decision-making could be analyzed in terms of three periods: fantasy, tentative, and realistic choices (Ginzberg, Ginsburg, Axelrod & Herman, 1951).

Each of these approaches is helpful, particularly when predicting the gross behavior of large heterogeneous groups. But in predicting career behavior within homogeneous groups, e.g., graduate students in industrial administration, the authors have found a need for an understanding of the "fine grain" of decision-making. By this is meant the precise characteristics of the student's decision-making:

> How many alternatives did he consider?
>
> How carefully did he consider each?
>
> How much information gathering did he do?
>
> How much did he test his beliefs and perceptions against the real world?
>
> How much social support did he receive in his decision-making?
>
> How definite and deliberate was his decision-making?
>
> When did he first consider the alternatives he chose?
>
> To what extent is he still in doubt about the wisdom of his choice?

How committed is he to his choice?

To what extent is he withholding his energy and resources in case he finds the alternative unattractive?

Precisely how does he perceive his choice? As a stopgap? As an experiment? As a lifelong career?

Exactly how did he go about eliminating alternatives when he made his decision?

What strategy is he following for testing and refining his decision?

The subject's status in regard to these questions seemed to have important behavioral outcomes. Broadly speaking, this research was designed to ascertain why this was and to identify the most central and significant questions or variables involved.

Overview of Procedure

As stated, the approach to the problem consisted of two phases: the case studies (Phase I) and the panel study (Phase II). The case studies were planned to be exploratory, to give the investigators a chance to examine the process of decision-making as it progressed during the last year of formal schooling for 30 subjects. It was believed that in this way the dynamics of individual decision-making could be studied more adequately than in a cross-sectional study or a cross-section with a single follow-up, even though it was recognized that the time required for intensive case studies would limit the sample to a size which would preclude most tests of statistical significance.

By means of repeated testing and interviews the investigators would be able to observe the effect of various environmental inputs (job information, opportunities, family pressure, supports) on the on-going career planning of the Ss. The extensive interview material and, in addition, a battery of pencil-and-paper tests which would be taken on the same day the interviews were conducted would enable the investigators to relate the content of the interviews to objective measures of values and attitudes. The results are described in Chapters 2 through 6.

Phase II of the research was planned partly as a means of correcting for the shortcomings of the small sample of Phase I. This was to consist of a questionnaire study of a larger, more homogeneous sample of 60 students with the questionnaire being administered at least twice, i.e., in two waves, preferably more, separated by at least nine months. As it turned out, this sample experienced a large shrinkage (from 60 to 45), but it did provide an opportunity on a limited basis to test hypotheses independent from the case studies. The results of Phase II are fully described in Chapter 7.

Refinements in the Plans for Phase I

Originally it was planned to ask the Ss of Phase I to attend test and interview sessions every two weeks for 24 weeks. For reasons which are discussed in Chapter 2, it was found that this time interval between interviews and tests was too short. Consequently the interval was doubled in length, which worked out quite satisfactorily. In anticipation of difficulty in obtaining Ss who would be willing to contribute as much of their time as required, it was planned to pay a flat fee of $50.00 to each

S at the end of the sessions. When the time interval between sessions was extended to four weeks with a consequent cutting in half of the number of sessions, the fee was reduced to $25.00. Apparently this fee combined with whatever non-monetary satisfactions the Ss derived was sufficient; all Ss were highly cooperative throughout the study. This is discussed further in the next chapter.

The original plan was to give five tests each time the S was interviewed. The following instruments were cited as examples of the type which would be given:

(1) The Twenty-Statements Test of Self-Attitudes. This instrument, which was developed by Kuhn and McPartland (1954), is a semi-projective device in which the S is asked to write twenty statements in answer to the question "Who am I?" Pre-tests of the instrument with a sample of students studying Introductory Psychology at Carnegie Institute of Technology indicated that asking the subjects to write ten statements rather than twenty greatly reduced the time required (a crucial consideration in this research) and also reduced subject resistance without any apparent loss of richness in the responses. Consequently, a so-called Ten Statements Test was used in the study. A copy of the test is included in the Appendix. At the end of the interview and test sessions an initial attempt was made to derive meaningful measures from the data. The scoring agreement among the raters was so low, however, that the data was set aside and priority was given to extracting scores from the interview material. The investigators are of the opinion that the data from this instrument is potentially useful but developing reliable scoring categories and training scorers to achieve adequate scoring agreement is a major task.

(2) A specially-constructed semantic differential test based on Osgood's method (Osgood, Suci & Tannenbaum, 1957). This instrument was designed to measure the S's feeling tone towards certain concepts which were found to be of importance to the Ss: "engineering", "money", "business executive", "security", "my ideal self", "responsibility", "creativity", "pressure", "research scientist", "ambition", "industry", "myself". A pretest of the instrument (See copy in Appendix) indicated that these concepts each had different profiles, and that each of the scales used provided discriminations except one, the "dark-light" scale. A scale marked "opaque-transparent" was substituted and proved satisfactory.

In the test sessions, questions were frequently asked about the concept "industry". The Ss were instructed to regard it as a situation in which to work and not as synonymous with industriousness. This concept would not be used in a replication of the study.

In view of the large number of responses involved (25,200) a computer program was written to perform an analysis of trends in the Semantic Differential Test results. Unfortunately a change-over at Carnegie Tech from one type of computer to another prevented the analysis from being completed in time for this report.[1]

(3) Bales' Value Profile Test. This instrument is a test of values recently developed in the Laboratory of Social Relations, Harvard University. After corresponding with Professor Bales and seeing the results of a factor analysis of the items it was decided not to use the test. Although it is a promising instrument, the scores provided were not sufficiently relevant to the research problem at hand to justify the time required for its administration, which even for the short form of the Test is 30 minutes.

As a substitute for this instrument, the Allport-Vernon-Lindzey Study of Values was used. The excellent results obtained are fully described in Chapter 4.

(4) Selected items from the questionnaires and tests of values used by Morris Rosenberg (1957). After a pretest, a one page test labelled The Job Characteristic Test (See copy in Appendix) was assembled. The results of this testing are presented in the next chapter.

(5) Ghiselli Self-Description Inventory. This is an experimental adjective check-list recently developed by Ghiselli (1956). The test was used (See Appendix) and scored for several of the scales resulting from research by the author of the test. Preliminary analysis of these scores provided uniformly negative results. After corresponding with Dr. Ghiselli it was decided that the scales which were scored were not appropriate for this research, perhaps because they were derived largely from an industrial setting, and that development of local scales which would be relevant was beyond the scope of the present study.

The only other instrument used in Phase I was a personal history questionnaire which was devised to produce information about the S's career plans and his attitude towards them and the difficulty he had experienced in the past in developing them. In addition this questionnaire, which was given at the first test and interview session and again at the last session, asked about the S's parents and their feelings about his career, along with some demographic facts. This information is summarized in the next chapter.

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[1] The authors will gladly make these results available to any interested reader as soon as the analysis is complete.

Phase II: The Panel Study

This phase was designed to test predictions in regard to the short-term effects of the different variables of the decision-making process. At the end of Phase I, the tentative model of decision-making was refined (See Chapter 3) and on the basis of the refined model certain relationships between cognitive dissonance, indecision, and group characteristics were proposed.

The main part of the data collection for this phase was accomplished in the 1961-62 academic year. One year earlier, in anticipation of the study, a long personal history questionnaire was given to the entering class of the Graduate School of Industrial Administration (GSIA) both as a means of pretesting the questionnaire and of identifying potentially significant variables and relationships. After this exploratory study the questionnaire was revised for administration the following year. Chapter 7 is devoted to a description of the results of this phase.

Summary

The broad pattern of career development has been studied extensively, but the "fine grain" of career decision-making has received very little attention. Previous studies by the principal investigator have pointed to the nature of career decision-making as a major determinant of the energy and enthusiasm which individuals will invest in their occupation. This decision-making was viewed in this research as a problem in complex information processing. Consequently, the first phase of the research was planned to be intensive studies of the career thinking and attitudes of a small group of university students in their last year of formal education. To counteract some of the disadvantages of case studies, Phase II was designed as a panel study of a somewhat larger sample. Originally, a follow-up investigation of a group of teachers first studied eight years ago was planned as a third phase of the research, but this study was omitted when it became necessary to shorten the duration of the research from three to two years. Phases I and II were conducted as planned except that it was necessary to increase the time period between interviews from two to four weeks. Four tests were selected from the five tests originally regarded as possibilities and a fifth test was substituted. The following chapters are devoted to descriptions of the two phases of the research.

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Part II

Phase I: The Case Studies

Chapter 2

Selection, Testing, and General Description of Phase I Subjects

Of all the decisions which a person makes in the course of his career probably the most important concerns his first full-time position after completing his formal education. It is this decision which, more than any other, drastically reduces the number of occupational alternatives which are open to him later on. He may, of course, change positions later in life; but, both from the point of view of accumulated experience, which cannot be wasted, and enlarged social commitments, which limit his ability and opportunity to qualify for different positions, his freedom of choice later in life is limited.

It is also true that when a person enters an occupation which requires a highly specialized education, the crucial decision point may fall earlier in his career than for others. For a young person who decides to be an architect, for example, the critical decision point is probably the last year in high school or the first year of college insofar as a decision at that point to undertake four or five years of training as an architect has the effect of greatly reducing the range of occupational alternatives among which he will have to choose later, due to the years of study he will have invested in architecture (meaning that he cannot casually switch fields) and the small number of alternatives for which architectural training qualifies him.

The decision is also made early, of course, for students who do not attend college. For the great bulk of those who do attend college, however, the decision which is made in regard to the first position after completing four years of undergraduate training is of key importance.[1] This chapter summarizes the selection, testing, and the broad features of the career decisions of the thirty university students who were the Ss of Phase I of this research. As mentioned earlier, ten were seniors in Margaret Morrison College for Women, the women's school which is part of Carnegie Institute of Technology; ten were men enrolled as seniors in the School of Engineering and Science at Carnegie Tech; and ten were men enrolled in the second year of a two-year program leading to a Master's degree in industrial administration.

These subjects were selected by taking every tenth person from the student directory until ten students from each subgroup were obtained. Students registered in the Evening School and the School of Fine Arts were excluded from the sample, the first on the grounds that they represented a highly heterogenous sample, many of whom would be unable to attend the interview and test sessions during the day; and the second because they represented a group with very unique occupational problems, the adequate study of which required a separate effort. In addition, foreign students who attended non-English speaking undergraduate schools were excluded. An individually typed letter, a copy of which is in the Appendix, was sent to each potential subject. Four weeks later, follow-up letters (see Appendix) were sent to the students not acknowledging the first letter, and three weeks after that a second follow-up letter (see Appendix) was sent. Those students who still did not respond were called by telephone or visited in their dormitory.

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[1] Rather than speak of "the decision which the person makes", the term "occupational choice" could have been used. The authors have a small preference, however, for the former language since the decision which a person makes may be a decision not to make a choice at the particular time in question. He may, for example, decide to study for two more years and obtain a Master's degree in business administration and then decide on what position he would like to have. It might be said that such a person has made an occupational choice of a career in business administration, but the observations of the authors suggest that this frequently represents a refusal to make, or an avoidance of, a choice in the usual sense of the word, and therefore, that it is better to use the more general term decision.

Each prospective S̲ was told that there would be seven consecutive sessions at one month intervals; that each testing and interview session would take approximately two hours of his time, and that at the end of the year he would receive $25.00.

Originally it was planned to hold 12 interviews at two-week intervals. Practice interviews held during the summer preceding the Fall semester indicated, however, that the two week time interval was too short. The main problem was one of subject resistance; the two-week interval was perceived by the subjects as being too short for them to have anything to report different from their last interview. Whether this was true or not, it appeared that their believing it to be true would seriously affect their motivation. The investigators also decided there would be a problem of the S̲s' remembering their test responses when the test sessions fell only two weeks apart. Lastly it was believed that there would be too great a tendency for the verbal report of each interview to be influenced by the report of the previous interview. Even with a one-month interval, the S̲s' inclination to keep whatever he said in one interview consistent with what he said in previous interviews was a minor problem. In view of these factors it was decided to space the interviews and test sessions one month apart rather than two weeks apart.

Four students refused to serve as Ss, meaning that 34 students were invited to serve in order to have 30 Ss for the study.

All 30 Ss participated in each of the seven test and interview sessions, even though some were very pressed for time towards the end of the year.

The Ss were told that the research was a study of changes in values which take place in the last year of formal education, and that the test results could not be discussed with them during the year, although at the end of the study the investigators would tell them anything they wanted to know about the study and their personal results. No mention was made of the investigators' special interest in career decision-making, although it later was apparent that the Ss were aware of this interest, probably as a result of the nature of the questions asked during the interviews.

Interview and Test Procedure

When possible, the Ss were asked to set aside two hours for each test and interview session. An attempt was made to standardize each session; each time the S came into the Department of Psychology for his session, he was immediately given the Semantic Differential, the Self-Description Inventory, and the Allport-Vernon-Lindzey Study of Values. He was then interviewed and afterwards was asked to fill out the Ten Statements Test and the Job Characteristics Test. The interview was conducted in the middle of the test session in order to break the strain and tediousness of taking five tests within a short time period. Testing conditions were maintained as constant as possible, telephone service was shut off during the sessions, distractions were minimized. The principal investigator tested and interviewed ten of the Ss, the same Ss each month, and Ronald Baenninger tested and interviewed the balance of the sample.

The interviews were recorded monaurally on Wollensak tape recorders. The microphone was kept on a table close to the interviewer and interviewee but the recorder was kept out of sight, and operated as nonchalantly as possible.

How structured and standardized to make the interviews was a subject of considerable study and concern for the investigators. At one extreme is the procedure of following a prepared list of questions in a fixed order with a fixed time limit, never departing from the list. At the other extreme is a completely unstructured and undirected interview, which rambles wherever the mood of the interviewer and the interviewee takes it.

The procedure which was adopted was essentially a compromise between the two extremes. The features of this procedure and some of the reasons for them are:

a. A minimum time-limit of 30 minutes. To make sure the Ss did not decide they could briefly answer the questions asked and then leave.

b. No maximum length. To encourage the Ss fully to describe their thoughts and not feel under pressure to be brief.

c. A set list of topics to be covered. To make sure complete raw data for analyzing change over time in certain variables would be obtained. Each interview after the first interview (which required special introductory queries) was begun with "Well, what's on your mind these days?" but there was no set pattern for subsequent questions.

If the S spontaneously offered all the required information (as some Ss did) no questions would be asked. If the S wandered into totally irrelevant areas a direct question sometimes would be asked in order to bring him back to the subject.

A listing of the questions used in the interviews is included in the Appendix. These particular questions were selected from a larger number after practice interviews showed them to be productive and fitting.

Probably the most difficult methodological question was how much the interviews should probe into the Ss' cognitive processes by asking direct questions. A serious participant-observer problem was present. If the Ss were asked specific questions about how many alternatives they considered, about the attributes of each alternative, about which attributes were important, and precisely how they went about accepting and rejecting alternatives, they surely would have been forced into realizations and insights into their own thinking which they never would have had otherwise. Questioning the S about apparent inconsistencies or illogicalness in their thinking surely would have taught them to be more rational in their thinking. Asking them about details would have reminded them of thoughts and feelings they had forgotten, suppressed, or were deliberately avoiding.

But, if the interviewers did not probe into these areas at all, one of the main purposes of the investigation, to examine the cognitive processes in career decision-making, would have been defeated. Consequently, it was decided that, even at the risk of participating in their thinking, the Ss would be encouraged to disclose all aspects of their thinking, but that this would be done as much as possible by means of non-specific encouragers like, "Care to elaborate on that a little more?" or, "Tell me more about your thoughts in this general area" or, "When you're just day-dreaming about this, what goes through your mind?"

Prior to the first interview, the Ss completed the long Personal History Questionnaire concerning their past thinking about a career, their future plans, interests, family, and their family's and friends' attitudes towards their career plans, and the subjects' values. A copy of this questionnaire is in the Appendix. Then, approximately seven months later, they completed a slightly abbreviated form of the same questionnaire. Most of the data to be reported here came from these questionnaires. Other chapters are devoted to the interviews and to the test results.

The Characteristics of the Sample

Very early in this research it became apparent that the sample of thirty could not be treated as a whole. The career thinking of the women had to be considered separately from the men and the graduate students separately from the undergraduates. Splitting the sample of thirty interviews into three subgroups, each with an N of 10, obviously imposed a need to regard the results as highly tentative.

Some of the gross characteristics of the 30 Ss are given in Table 1. The median age of the graduate students in industrial administration (IA) is 5 years more than the median of 21 for the undergraduates because most of the graduate students had either fulfilled their military service requirements or had been employed in industry for a few years before enrolling in the graduate school.

Table 1

Characteristics of Subjects

Sample	N	Median age	Median Parents' Income	Number Married	U. S. citizens
Male undergraduates in engineering	10	21	7,850	0	10
Male graduate students in industrial admin.	10	26	10,000*	4	8**
Undergraduates in women's college	10	21	12,840*	0	10

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*Three of the graduate students and five of the women either omitted the item about their parents' income or said they did not know about it.

**One was Canadian and another British.

In the early fall of their senior year at the time of the first interviews only 3 of the undergraduate engineers said they had either a fairly specific idea about what they would like to do or a specific plan worked out in some detail, as shown in Table 2. The other seven checked either the "very general" or the "fairly general" categories. This was in answer to item 1-78 of the Questionnaire which read: "Which of the following best describes your present long-range career plans?"

Six of the 10 graduate students reported specific plans and 7 of the undergraduate women. Only 1 S, a graduate student from Great Britain, said he was committed to work for a specific company when he received his degree and this commitment was described as a moral, not a legal commitment. Furthermore, none of the Ss said he or she was obligated to enter a family business. Thus, practically all of the Ss were free, at least in these respects, to choose a position to their liking.

Table 2

How Subjects Described Their Momentary Plans

(Question 1-78)

	Women	Men E & S	Men IA	Total
1. Very general	2 (1)	2 (1)	1 (1)	5 (3)
2. Fairly general	1 (3)	5 (7)	3 (3)	9 (13)
3. Fairly specific	5 (6)	3 (2)	6 (5)	14 (13)
4. Specific	2 (0)	0 (0)	0 (1)	2 (1)

In this and in the following tables response frequencies for the first test session are given in each left-hand column, and frequencies for the last test session are in parentheses.

Assuming that the general trend of career development is in the direction of greater specificity, as Super and others have proposed, we expected that a larger proportion of the graduate students would regard their plans as specific, which is the case. For these particular samples, however, we would not have been surprised if the plans of the graduate students had been relatively more general, for the authors have observed a tendency for Master's degree programs, particularly in the field of business and industrial administration, to attract men who have not as yet decided upon their occupational goals and are using this means to postpone the decision for one or two years or to test a particular alternative. The interviews of the graduate student subjects of this study showed this tendency in three cases.

Why more women should use the specific or fairly specific categories is not clear; it may be a difference in their frame of reference. How a person evaluates the specificity of his plans obviously is highly subjective.

The degree to which the *S*s were interested in various kinds of job responsibility is given in Table 3. The interests of the subgroups, which are not given in order to conserve space, are approximately what was expected except that the IA students expressed slightly more interest in teaching than the other two groups, and the engineers expressed more interest in sales or promotional work than the IA students did.

Table 3

Interest in Various Kinds of Job Responsibility

(Page 1 of Questionnaire)

	0	1	2	3	4
	Definitely Not Interested	Not too Interested	Fairly	Quite	Highly
Supervisory executive	0 (0)	2 (3)	6 (8)	9 (4)	13 (15)
Advisory: Staff or consulting	0 (0)	3 (0)	8 (12)	13 (13)	6 (5)
Applied or developmental research	8 (3)	7 (13)	8 (9)	5 (6)	2 (0)
Fundamental research	17 (11)	7 (12)	1 (4)	2 (2)	3 (1)
Teaching	7 (5)	8 (9)	6 (9)	7 (4)	2 (3)
Sales or promotional work	4 (4)	10 (12)	8 (8)	5 (3)	3 (3)
Employee or community relations	4 (6)	11 (9)	8 (8)	2 (4)	5 (3)
Entrepreneurial, self-employed	3 (3)	8 (9)	8 (8)	5 (5)	6 (5)
Engineering services	8 (9)	7 (5)	5 (7)	8 (7)	2 (1)
Total frequency	51 (41)	63 (72)	58 (73)	56 (48)	42 (36)
Net change in frequency	-10	+9	+15	-8	-6

The changes in interests which occurred during the year are, by and large, in the direction of moderation combined with a general downward shift of the degree of interest. It is proposed that these changes reflect a tendency for individuals to make the interests which they express consistent with their occupational decisions. Subjects will express higher interest in the kind of job which is similar to their choice and reduced interest in job classifications which they rejected. Rosenberg reported a similar effect in his study of occupational values (1955, p. 257).

Half of the engineers initially said they were planning to go into work other than engineering, three mentioning "business" and two mentioning advanced study. Two of the engineers planned to move into management eventually, giving a total of five who expected in the long run to be in management.

Nine of the IA graduate students planned a career in some aspect of industrial administration, mostly in staff work with movement into managerial or executive positions later. One of the IA students was completely undecided about his career.

Three of the women were interested in fashion design, two in dietetics, two in teaching, one in secretarial work, one in technical writing and one was undecided.

At the end of the year all Ss accepted a position at least related to their plans described in the previous fall, except that two engineers abandoned their plans for advanced work and one of the women took a secretarial position rather than a teaching position. The IA man who was undecided accepted a fellowship for advanced study. The woman undergraduate who was undecided eventually accepted a position as an airline hostess.

The interesting fact, however, is that in the Personal History Questionnaire, which all subjects completed after their last interview, the numbers who reported that they had specific career plans decreased from 7, 3 and 6 to 6, 2 and 6 for the women, engineers and IA men respectively. These changes are summarized in Table 2.

In answer to the question, "How much conscious career planning have you engaged in?" three Ss checked "Some thought has been given from time to time", sixteen checked "Quite a bit of study and self analysis", nine checked "Extensive study and self analysis" and two checked "Continuous study and self analysis".

Table 4

Amount of "Conscious" Career Planning Subjects Engaged In

(Question 1-77)

	Women	Men		Total
		E & S	IA	
1. Very little	0 (0)	0 (0)	0 (0)	0 (0)
2. Some	2 (1)	1 (1)	0 (0)	3 (2)
3. Quite a bit	6 (4)	4 (7)	6 (5)	16 (16)
4. Extensive	2 (4)	3 (2)	4 (5)	9 (11)
5. Continuous	0 (1)	2 (0)	0 (0)	2 (1)

The direction of the changes may be of importance. Of the nineteen Ss who fell in the lower three categories, eight reported an increase in the amount of planning and one a decrease. But, of the eleven Ss who fell in the higher two categories (Extensive and Continuous) five reported a decrease and none an increase. This suggests that there is some quantity of planning which must be done by every young person at this stage and that if this is done early in college less needs to be done later and vice versa.

For these S̲s, career decision-making was by and large a difficult process. As shown in Table 5, over half of the S̲s said it was "extremely", "very", or "rather" difficult. At the end of the year, the amount of difficulty reported decreased, which was not expected since most of the S̲s were observed to experience considerable decision-making difficulty during the year. This may well be a problem of fluctuating frame of reference in the S̲'s interpretation of the word difficulty.

Table 5

Nature of Career Decision-Making

(Question 1-51)

	Women	Men		Total
		E & S	IA	
0. Extremely difficult	1 (0)	0 (1)	2 (2)	3 (3)
1. Very "	1 (1)	4 (1)	3 (1)	8 (3)
2. Rather "	1 (1)	3 (3)	2 (4)	6 (8)
3. Slightly "	4 (6)	3 (5)	2 (2)	9 (13)
4. Easy process	3 (2)	0 (0)	1 (1)	4 (3)

The women reported less difficulty than the men, which is probably related to the role expectations our culture has for women. In one sense, no decision-making is required of them since even college graduates are expected to become housewives. A college woman may decide to consider alternative careers but, generally speaking, the cost of a wrong decision is less since women can "fall back" on being a housewife.

The subjects were asked how they felt about their career choice, both at the time they first made it and "now". (Questions 5-29 and 5-71) These results are summarized in Tables 6 and 7. In general, the responses from the two questions do not differ; what few changes there are are unexpectedly in the direction of increased uneasiness.

Table 6

Feelings About Current Career Choice When Choice Was First Made

(Question 5-29)

	Women	Men		Total
		E & S	IA	
1. Decidedly uneasy	0 (0)	0 (0)	0 (0)	0 (0)
2. Somewhat uneasy	2 (1)	0 (0)	2 (1)	4 (2)
3. O.K., some doubts	1 (6)	7 (4)	3 (4)	11 (14)
4. No qualms	5 (1)	2 (4)	3 (5)	10 (10)
5. No "choice" yet	2 (2)	1 (2)	2 (0)	5 (4)

Table 7

Present Feelings About Current Choice

(Question 5-71)

	Women	Men		Total
		E & S	IA	
1. Decidedly uneasy	1 (0)	0 (0)	0 (0)	1 (0)
2. Somewhat uneasy	1 (0)	2 (1)	0 (0)	3 (1)
3. O.K., some doubts	1 (2)	5 (4)	3 (5)	9 (11)
4. No qualms	5 (6)	3 (4)	4 (5)	12 (15)
5. No "choice" yet	2 (2)	0 (1)	3 (0)	5 (3)

There is, however, a methodological problem here which frequently arises in work in this area. What appeared to be a change in feelings about an occupational alternative may in fact have been a change from one alternative to another. As a precaution, the investigators asked each _S_, after a series of questions concerning career choice, to describe the "career choice" he had had in mind in answering the questions. As the investigators had suspected, these "choices" proved to be of very differing nature from one S̲ to another and — for individual S̲s — from the first administration of the Questionnaire to the last. Sometimes the "choice" concerned a broad area like business, as opposed to teaching. Other times the choice concerned a specific occupation (e.g., chemical engineering), or a specific industry (e.g., mining), or a specific firm (e.g., Gulf Oil), or a specific position within a specific firm (e.g., Assistant to the Chief Engineer of the Pittsburgh plant of XYZ Steel Company).

No doubt the characteristics of the decision-making process differ depending on specificity of choice. For example, selecting a specific objective commits an individual to a particular course of action. Modifying one's career plans in such a way as to increase their generality (and thereby decrease commitment) was observed in the interviews to be a frequently used way of diminishing decision-making dilemmas. The more concrete and specific the S̲ becomes in formulating his plans, the more likely he is to encounter information which raises questions about their appropriateness, or — to use the language to be proposed in the next chapter — information which increases cognitive dissonance. Increasing the generality of career plans is one way of decreasing cognitive dissonance.

Two last questions in this series concerned, first, how each S̲ would like to regard his "current" choice and, second, how he regarded it "realistically speaking". The most popular response (see Tables 8 and 9) was "fairly permanent". The net change, over the nine month period, was slightly in the more permanent direction, but a surprising number changed to less permanence. Again, the interviews provided a possible explanation for such a shift. When a subject finds

Table 8

How Subjects Would *Like* to Regard Current Career Choice

(Question 5-30)

	Women	Men		Total
		E & S	IA	
1. As very permanent	1 (3)	0 (1)	1 (1)	2 (5)
2. As permanent	3 (1)	1 (2)	3 (2)	7 (5)
3. As fairly permanent	3 (5)	7 (4)	3 (6)	13 (15)
4. As somewhat tentative	1 (0)	2 (2)	2 (1)	5 (3)
5. Not applicable, no "decision" yet	2 (1)	0 (1)	1 (0)	3 (2)

Table 9

How Subject Regards Career Decision, "Realistically"

(Question 5-72)

	Women	Men		Total
		E & S	IA	
1. As very permanent	2 (3)	0 (0)	0 (1)	2 (4)
2. As permanent	3 (0)	3 (4)	4 (4)	10 (8)
3. As fairly permanent	1 (4)	4 (3)	4 (5)	9 (12)
4. As somewhat tentative	2 (2)	3 (2)	1 (0)	6 (4)
5. Not applicable, no "decision" yet	2 (1)	0 (1)	1 (0)	3 (2)

himself in a decision-making dilemma because one or more alternatives have long-range characteristics which do not meet his requirements (an inadequate retirement plan, for example), one strategy for decision-making is for him to shorten his planning horizon, in effect saying, "After all, I'm not going to be in that position permanently. I'm just going to try it for two or three years."

There appear to be no significant sex differences in perceived permanence.

For some reason which is not clear, the "realistic" estimates tended to be slightly more permanent than the "would like" responses at the beginning of the year but by the end of the year, there were no appreciable differences.

In response to a question about how important it was to them to satisfy their parents' wishes, the responses were spread quite evenly from "not too important" to "very important". (See Table 10) The graduate students were clearly lower in the importance they said they placed on their parents' wishes, presumably because of their greater age. The women's responses were clearly higher. Over the year the engineers shifted downward in degree of importance, the other two groups remaining about the same. As for the opinions of their plans which people other than the family held, there are no significant differences except that "Friends" are generally reported to be less approving than parents.

Table 10

Importance of Parents' Wishes

(Question 5-31)

	Women	Men		Total
		E & S	IA	
1. Not too important	1 (1)	1 (3)	4 (4)	6 (8)
2. Somewhat important	2 (1)	3 (1)	3 (3)	8 (5)
3. Fairly important	3 (5)	0 (4)	3 (3)	6 (12)
4. Quite important	1 (0)	5 (2)	0 (0)	6 (2)
5. Very important	3 (3)	1 (0)	0 (0)	4 (3)

On the final page of the questionnaire, the Ss were asked to complete a so-called Job Characteristic Test which was adapted by the investigators from Rosenberg's work in occupational values (1957). The results are summarized in Table 11.

Table 11

Importance of Certain Job Characteristics, Averaged for Each Group

	Women	Men		Total
		E & S	IA	
N	10	10	10	30
a. Security	1.6 (1.7)*	2.3 (2.5)	3.1 (3.0)	2.3 (2.4)
b. Freedom from conformity	2.1 (2.0)	2.3 (2.8)	3.0 (2.5)	2.5 (2.2)
c. Opportunities to use abilities	1.7 (1.7)	1.6 (1.8)	1.3 (1.5)	1.5 (1.7)
d. Helpful to others	2.2 (2.2)	2.6 (2.8)	2.4 (2.2)	2.4 (2.4)
e. Useful to society	2.6 (2.3)	3.1 (2.7)	2.4 (2.4)	2.7 (2.5)
f. Leadership	2.9 (2.4)	2.1 (2.3)	1.6 (2.4)	2.2 (2.4)
g. Social standing and prestige	2.8 (2.9)	2.7 (2.8)	2.5 (2.4)	2.7 (2.7)
h. Creativity	2.1 (2.0)	2.3 (2.4)	2.1 (2.0)	2.2 (2.1)
i. Enough money for comfort	2.1 (1.7)	1.7 (1.6)	2.0 (2.2)	1.9 (1.8)
j. Work with people	1.7 (1.9)	2.0 (2.2)	2.1 (2.4)	1.9 (2.2)
k. Professional recognition	2.7 (2.6)	3.0 (2.7)	2.3 (2.5)	2.7 (2.6)
l. Freedom from supervision	3.0 (2.4)	3.4 (3.4)	2.9 (2.4)	3.1 (2.7)

* 1 = Extremely important, 2 = very important, 3 = fairly important, 4 = not very important, 5 = not at all important.

Unlike the men, the women placed a "stable, secure future" first in importance with a mean rating which fell between Very Important and Extremely Important. Having "an opportunity to use my special aptitudes and abilities" and "opportunities to work with people" tied for second place in importance. "Freedom from supervision" was rated least important as was also the case with the engineers. At the end of the year, the ratings of importance were approximately the same, but having "a chance to earn enough money to live comfortably" moved into a three-way tie for first place and "work with people" dropped to fourth place.

The engineers placed less importance on a "secure future" and rated "opportunities to use abilities" at the top of the list. By the end of the year "money" became most important.

For the ten graduate students "Opportunities to use abilities" began and ended the year as most important. "Opportunity to exercise leadership" started in second position but dropped into a lower position by the end of the year. "Money" started and ended in third position.

Drawing any conclusion from these results is risky. Even if we assume that the changes are statistically significant, interpreting what meaning the word *importance* had for the *S*s is difficult, for a rating of how important an attribute of a job is represents a complex behavioral outcome. An obvious problem is that of the *S*'s frame of reference. How important is "very important"? The fact is that we cannot say, in any absolute sense; but we can draw some limited conclusions from the relative importance assigned to different characteristics.

Also, expressed importance is no doubt influenced by momentary need. If a subject is experiencing difficulty in obtaining an offer of a job with an adequate salary, *money* may seem much more important than it does to the student who has been offered several high paying positions. He may, however, in order to rationalize his difficulties, report that he regards money as relatively unimportant, or--recognizing that in some circles materialistic interests are not publicly acknowledged--he may assign relatively low importance to having "enough money for comfort". This last tendency may account for the graduate students' assigning relatively lower ratings to "money". Despite these possible effects, however, the consistently high rating of "an opportunity to use my special aptitudes and abilities" is impressive. The authors wonder if company representatives who interview college students for placement are aware of this state of affairs.

Summary

For Phase I of the research, 30 Ss were selected by sampling three segments of the student body of Carnegie Institute of Technology: the senior class of the women's school, the senior men in the School of Engineering and Science, and the men in the second year of a two-year program at the Graduate School of Industrial Administration. Since preliminary studies of these groups indicated that they differed in important respects, each group was handled as a separate sample of ten Ss, a number so small that this particular aspect of the research can only be regarded as a pilot study.

The 30 Ss were interviewed and tested once a month for seven consecutive months. There were no drop-outs from the study. This no doubt was partly because the Ss were promised a $25.00 payment at the end of the study, but in addition, the Ss seemed to sense that they were participating in a serious effort to which substantial time and research funds were being devoted and it was, therefore, important for them to be conscientious.

The major methodological question concerned the manner in which the interviews should be conducted. After a series of experimental interviews and study of the literature, it was decided to compromise between a highly structured and a completely undirected interview. The interviewers made sure that certain topics were discussed each month and encouraged the Ss fully to describe their thoughts in regard to their developing career plans, even though this inevitably meant that the plans were influenced by the discussions of them.

At the start of the Fall term none of the Ss was definitely committed to any particular employment following graduation, and only a fraction had specific long-range plans. Even at the end of the year most of the Ss had not formulated specific long-range goals. Generalizations here, however, are particularly speculative in view of differing ways in which specificity can be interpreted.

At the end of the year more subjects preferred to regard their choice as "fairly permanent" than the number preferring "permanent" or "very permanent" which the investigators regard as the results of a decision-making strategy, namely, that of eliminating undesirable features by shortening one's planning horizon.

Two other decision-making strategies were discussed: (1) postponement, for a variety of reasons--to try graduate work in some field, for example, and (2) by increasing the generality of one's plans such that they cannot conflict with specific details.

Half of the engineers viewed their undergraduate study more as preparation for a career in management than as professional engineering preparation. The graduate students in industrial administration planned to go into staff work with managerial positions following later. All of the women planned to be employed after graduation, with marriage and family life later.

Both in the fall and at the end of the sessions, the *S*s reported that they did quite a bit of "conscious career planning" and that career decision-making was by and large a difficult process. The women reported less difficulty than the men. It was proposed that this is attributable to societal role expectations which make career decision-making less pressing for women.

There appeared to be some small changes over the year in the uneasiness with which the *S*s viewed their decisions. Assuming that these were not chance fluctuations (a dubious assumption), the authors proposed that they are related to the specificity of each *S*'s career plans, and that increasing the specificity of one's plans is likely, *ceteris paribus*, to result in an increase in uneasiness.

The results of the so-called Job Characteristics Test were described. The women assigned greater importance to having a stable, secure future than the men, who gave first importance to having an opportunity to use abilities. The mean scores for each group changed during the year, but in view of the complex causation of perceived importance, few generalizations were ventured.

Chapter 3[1]

A Theoretical Model of Career Decision-Making

In this chapter five possible approaches to understanding career decision-making will be summarized and a theoretical model resulting largely from the study of the 30 *S*s of Phase I will be presented. The model is descriptive, not normative. We are concerned at this point with how individuals typically make career decisions, not with how they might optimally make them. The five different models are not an exhaustive inventory of available models described in the literature; the authors have omitted those which represent integrations of the approaches which will be described. Two examples are the excellent models by Blau et al (1956) and Ginsberg et al (1951).

Five Possible Models

The approach to career development which has received the most attention in the last fifty years has been referred to by Super and Bachrach as the trait-and-factor theory (1957, p. 9). Being closely associated with psychometric test development and the guidance movement in this country, it emphasizes individual differences and how they should influence the process of occupational choice. The word *should* is intentional; this work has had a strong normative flavor, probably because much of the research was designed with the practical objective of developing instruments to help young people make more intelligent career choices.

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[1] This chapter is based entirely on a paper which was prepared for publication in the *Journal of Counseling Psychology* and will appear in that journal sometime in 1963.

The decision-making model implicit in the trait-and-factor approach is what might be called *attribute matching*. The assumption is that the individual first takes an inventory of his personal attributes, then he ascertains the attributes required for successful adjustment in each of some set of occupations, and lastly he selects that occupation the requirements of which best match his attributes. This is the process in its simplest form.

The second model of career decision-making is that which underlies the approach to career development associated with dynamic personality theory. Here the goal of the process is to reduce need tension. With varying degrees of awareness of their behavior, individuals seek out or gravitate to those occupations which satisfy their needs. To the extent that conscious decision-making goes on, the individual appraises his own needs and estimates the need-reducing value of some set of alternatives. Teaching may be selected, for example, because the individual perceives it as satisfying his need to nurture young people.

A closely related approach is that of the various models of rational behavior employed in economics. These assume that the individual is faced with some set of alternatives each of which has certain outcomes which have a certain value to the individual and a certain probability of occurring. In accordance with one of several possible rules (See Arrow, 1951, p. 404-37) the individual chooses an alternative which will maximize his gain. He can, for example, try to minimize his maximum possible loss, or he can maximize expected value.

Fourth there is what might be called the *social man* approach which emphasizes the mobility provided and the limits imposed by the various social structures through which an individual's career carries him. Becker and Strauss (1956) view the maturing individual as a passenger on an escalator. But not an ordinary escalator—it may detour desired positions, its movement may be stopped or accelerated and it may branch into multiple lines, and to be a passenger there may be stringent requirements.

In accordance with this sociological approach the problem of the decision-maker becomes one of deciding which escalator to get on or, if he is already on one, whether he should switch to another. In the final analysis the decision which Social Man has to make is very similar to that of Economic Man. Choosing an escalator is choosing an alternative. The differences lie in the assumptions which economists and sociologists make about the value of key variables. The sociologist assumes that given certain alternatives, pathways, or careers the probabilities of certain outcomes occurring are very high, so high in fact that they can be regarded as certainties. For example, if one becomes a surgeon it is practically a certainty that he will enjoy high status in the community. The decision problem for the individual becomes one of deciding what outcomes he values the most and secondly whether he values these enough to pay the entrance requirements (the cost of training, relinquished income, license fees, etc.)

Also implicit in the sociological literature is the assumption that the number of pathways of escalators which the environment provides may be severely limited, particularly if the individual is a member of a minority group, and that the individual has highly circumscribed power to influence the number. Thus, obtaining and handling a large amount of information about a large number of alternatives is not a major problem for the individual.

Quite a different point of view is the complex information processing approach, a major premise of which is that the individual is faced with multitudinous behavioral alternatives and information about them and that it is his limited capacity to handle information which limits the rationality of decision-making. Rather than being an escalator-rider, the career decision-maker is a chess player. Simon has pointed out that "there is a complete lack of evidence that, in actual human choice situations of any complexity, these computations (required by the "classical" concepts of rationality) can be, or are in fact, performed." (1955, p. 104) He then proposes some modifications that simplify the choice process, the principal one being that the individual can search for those outcomes which are satisfactory to him and then search for a behavioral alternative which has outcomes all of which are in the set of satisfactory ones.

The incomparability of different outcomes, which has frequently been cited as a shortcoming of classical economic theory, is particularly critical in career decision-making. How do we, for example, compare the intellectual stimulation of a work setting with the pleasantness of the climate of the locale? One solution is provided by Simon's approach: instead of attempting a complete ordering of pay-offs, the different values can be thought of as the components of a vector function with a satisfactory payoff being one which has values achieving the satisfactory level of each vector.

In order to specify precisely the decision processes of the individual (and to facilitate the generation of hypotheses) Simon and his associates have programmed computers to behave in accordance with conceptions exemplified by the foregoing comments. This is not because the computer is viewed as analogous to the human, rather Simon's position is that "the appropriate way to describe a piece of problem-solving behavior is in terms of a program..." (Newell, Shaw, & Simon, 1958, p. 153). In this context career decision-making is a special case of problem solving.

The Choice of a Model

Evaluating the possible models of career decision-making is difficult for there has been little, direct, deliberate testing of them. To the extent that the value of a model rests on the amount of data it explains we, therefore, are circumscribed at this time. There are, however, some general observations which raise questions about the usefulness of certain of the models for the particular problem at hand.

Perhaps the best critique of the attribute-matching model of career decision-making is provided by E. K. Strong in commenting on the limitations of his Vocational Interest Blank as a predictor of occupational choice. Strong makes a distinction between preference and choice and discusses the factors which cause choice to differ from preference.

> A number may be mentioned: (1) pressure of family or friends of family to enter a given vocation, to live near mother, etc.; (2) desire to marry, which handicaps further preparation for the preferred occupation; (3) an opportunity to become immediately established; (4) lack of necessary finances to finish education; (5) lack of necessary ability; (6) lack of necessary personality; (7) lack of requisite health; (8) lack of information about preferred and competing occupations so that adequate plans cannot be formulated. (1943, p. 30).

A study by the chief investigator of the developing careers of 300 teachers (1955, 1957, 1960) lead to the same conclusions. It was common for members of the sample to be interested in teaching but not interested in being teachers. In some cases this was true even though their interests as measured by the Strong Blank were highly similar to teachers in their field. Thus for the attribute-matching model to be at all adequate it must include a very broad range of personal characteristics, e.g., interests, values, social preceptions, abilities.

Secondly, the model does not provide for consideration of some questions essential to an understanding of the decision-making process:

> What are the conditions which initiate the matching process? Casual empiricism indicates that individuals do not constantly engage in decision-making.
>
> Which alternatives are considered and in what order? Obviously the individual does not match his attributes against all possible occupational alternatives.
>
> What does the individual do in the absence of accurate information in regard to himself and the alternatives he considers?
>
> Which set of attributes of the individual are matched? Is it the attributes which the individual perceives himself as possessing at the moment? Or the individual's estimate of the attributes he is likely to have in the future? Or the attributes he might have under some ideal conditions?
>
> When does the matching process terminate? Or, put in another way, when is the individual satisfied with the match obtained? Is there some absolute minimum for a satisfactory fit?

The need reduction model of career decision-making provides a basis for comparing the attractiveness of different alternatives, namely their drive-reducing potential. But most of the limitations of the attribute-matching model are also true of it. Also this model imposes even greater information gathering requirements on the individual. Estimating the drive-reducing potential of an alternative requires extensive knowledge of it. Even if it is assumed that this information is obtainable we face the problem of comparability inherent in the economic model. Is an alternative which fully satisfies one's need for recognition but frustrates one's need for nurturance more attractive or less attractive than an alternative for which the reverse is true?

Also there is the effect of those variables which the Social Man model is designed to account for, the impact of the individual's social environment on his choice process. How does one incorporate such accidents of birth as race, color, and parental social status into a need-reduction model?

Clearly each of these models of career decision-making has limitations but at the same time each contributes useful dimensions to our understanding. The author's previous research indicates that in accordance with the attribute matching model individuals do take an inventory of themselves as part of their decision-making process. Or at least they have a perception of themselves, a self-image. Recorded interviews collected by the author are replete with self-perceptions such as the following:

I am good at mathematics.

I seem to be a natural leader.

I am a person who has to look at both sides of questions.

I like to work with people.

Also there are statements about the attributes of occupational roles:

To be a surgeon you have to have good manual dexterity.

You have to be a cut-throat to succeed in business.

In addition, we find statements about the *S*'s needs:

I have to have a job in which I can be creative.

I have to work outdoors.

If I couldn't talk to someone every so often I'd go nuts.

There is an awareness of social structure:

You have to have pull to get a good job with the city.

The good thing about teaching is that anybody can get a job if he's qualified.

There are lost of openings in the government for my people. (From a Negro student.)

Lastly, in the interviews there are many Economic Man kind of statements:

I can make more in industry than in college teaching.

The chances of long-term security there are slim.

Thus, each of the fields of social science which we have mentioned above is represented in the beliefs or——as they shall be labelled in the balance of this paper——the premises which appear in interviews. To complete the inventory, there are premises about the S's present state of well-being:

Things seem to be going very well.

I ought to decide what I want to be.

And premises referring to things which are important to the S:

It is unforgivable to make money by cheating others.

Whatever you decide, you have to leave the way open so you can change your mind.

Obviously some of these statements are misperceptions, but since our interest lies primarily in their behavioral consequences their veridicality is irrevelant.

Elements of a Theory

It is proposed that premises such as the above are the basic ingredients of career decision-making—the building blocks of career decisions. The number which enter into a given decision appears to be very limited, usually less than eight.[2] Since their function is more direct and immediate than the influence of needs, interests, or values, a possible source of error is removed by focusing directly on them.

In regard to the decision-making process itself we find the same absence of precise information, knowledge and ordering of payoffs which Simon points out in his critique of classical economic models. Furthermore, S's typically exhibit the simplified payoff functions which he proposes; outcomes tend to be regarded as satisfactory or unsatisfactory. The climate of a particular research laboratory is adequately stimulating or it is not.

In general, the complex information processing approach which Simon has applied to organizational behavior and individual problem solving has proved to be a useful way of conceptualizing career decision-making. Using the language and method of presentation of computer technology, the processes involved in career decision-making can be described with as much precision as is required. The only limits to the exactness of the program is the creativity, insight, and perseverance of the programmer, and the storage capacity of the computer available.

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[2] The resemblance of this observation to G. A. Miller's "magical number seven" (1956) is suggestive.

In this way the sequential nature of career decision-making can readily be represented. What appear to be separate decisions usually consist of series of more elemental tests such as the following:

> Should I pay attention to information about alternatives in the environment?
>
> Is it time to reconsider my present course of action or should the reconsideration be postponed?
>
> Have I searched for alternatives long enough?

In addition there is the important problem of predicting when decision-making begins, when it is terminated and what the individual does when he is unable to find a satisfactory alternative. To provide for these questions the author proposes that the motivating factor in career decision-making be regarded as the reduction of what Festinger has labelled cognitive dissonance (1957). This may also be described as the maintenance of internal consistency, or the maintenance of cognitive or structural balance but there are indications that Festinger's term is more appropriate, even though the model proposed differs in important respects from his formulation. For example, the author perceives efforts to reduce dissonance as preceding and facilitating decision-making rather than following it, as Festinger does.

A flow chart of the author's conception of career decision-making is given in Figure 1. In developing this flow chart the author has been

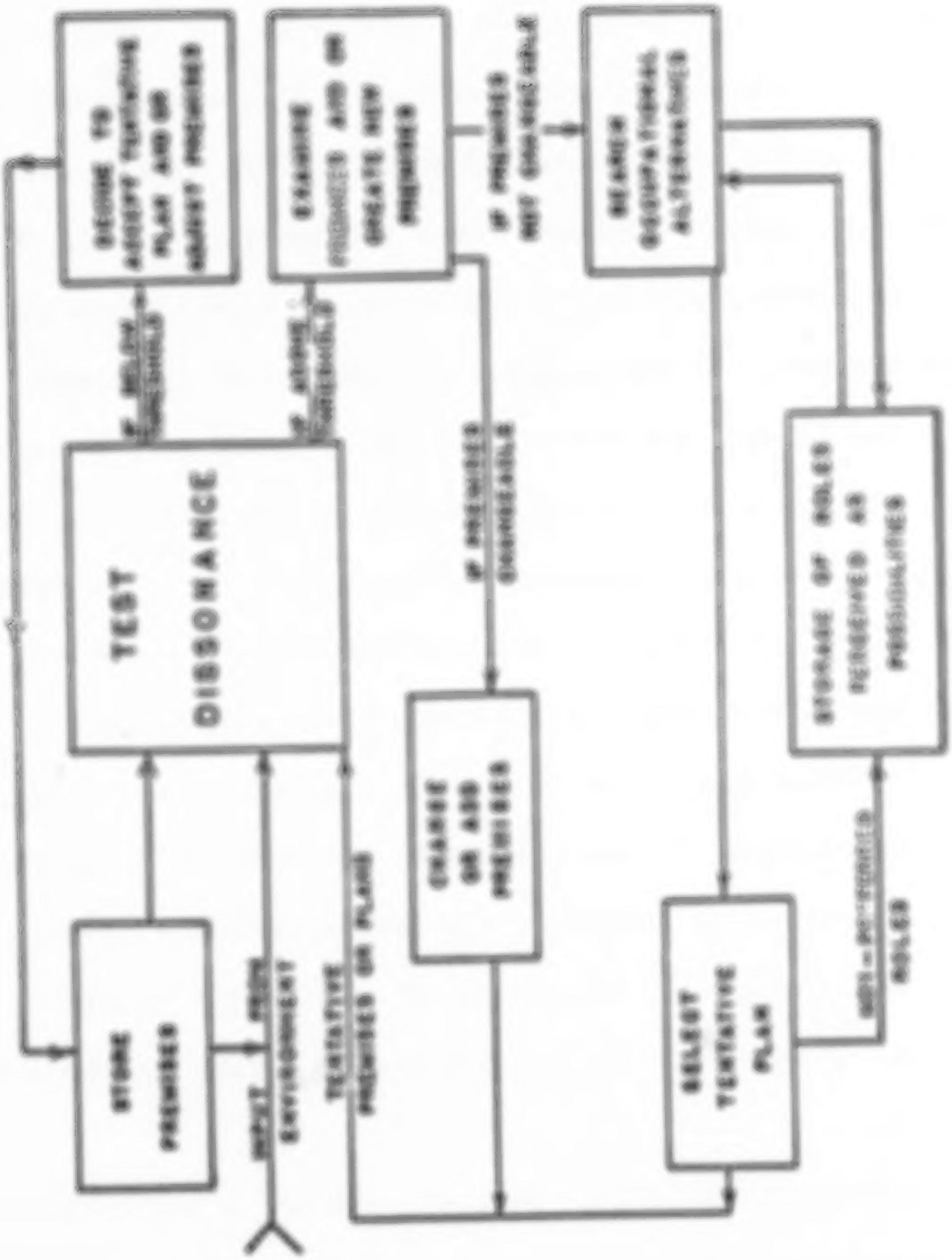
STORE PREMISES
INPUT FROM ENVIRONMENT
TENTATIVE PREMISES OR PLANS
TEST DISSONANCE
IF BELOW THRESHOLD
IF ABOVE THRESHOLD
DECIDE TO ACCEPT TENTATIVE PLAN AND OR REJECT PREMISES
EXAMINE PREMISES AND OR CREATE NEW PREMISES
IF PREMISES NOT CHANGEABLE
SEARCH OCCUPATIONAL ALTERNATIVES
IF PREMISES CHANGEABLE
CHANGE OR ADD PREMISES
SELECT TENTATIVE PLAN
NON-PERCEIVED ROLES
STORAGE OF ROLES PERCEIVED AS PERSONALITIES

Fig. 1. Flow Chart of Career Decision-making.

influenced by the models of organizational behavior which March and Simon have outlined (1958).

The decision-making process is initiated by some input from the environment. This input could be, for example, an offer of a new position, a warning that the person should decide on a career, or information to the effect that one's income is not sufficient. If, when dissonance is tested, the input has raised dissonance above the tolerable level, the person examines his premises, i.e., his beliefs and expectations about his environment and himself. If his premises can be changed to accommodate the input, he makes the change, and the revised set of premises are tested for dissonance. Notice also on the diagram the arrows indicating that the revised premises may affect any subsequent inputs from the environment.

If the person finds that his premises cannot be revised, he searches for possible alterations in his behavior, one of which may be implied by the environmental input. He selects an alternative and tests the tentative plan for dissonance. If the dissonance is now below threshold he *makes a decision* to accept the tentative plan and adjusts his premises accordingly. If, when tested, the dissonance is still above threshold, he repeats the process, either revising his premises or trying another behavioral alternative.

In emphasizing the direct role of premises in decision-making, the author is not discounting the role of unconscious factors, i.e., feelings and tendencies which the subject cannot verbalize, even to himself. Casual empiricism suggests that such feelings do influence decision-making. But the influence is indirect. Specifically, feelings appear to influence the order in which alternatives are considered and the energy decisionmakers will spend in trying to make certain alternatives less dissonant by revising premises.

Implications of the Model

Assuming that the author's adaptation of Festinger's concept is appropriate to the problem, several sets of hypotheses can be proposed to account for various aspects of career development. Of major interest are the hypotheses which the model suggests in regard to the difficulty which individuals experience in trying to make certain necessary career decisions. In terms of the model, high difficulty can be defined as continued unsuccessful attempts to reduce cognitive dissonance. Thus, the problem becomes one of identifying the causes of dissonance and the ways in which it is reduced. These ways or methods will be referred to as strategies.

Second, there is the problem of identifying the short and long-term effects of different strategies. Obviously some strategies—postponement, for example—are unsuccessful in reducing dissonance in the long run, but they may hold dissonance to a low level for a short period. Related to this is the question of the appropriateness of the career decisions which result from different strategies. A strategy may be successful in reducing dissonance but its cost in terms of constraints it imposes on individual behavior may be excessive.

Factors Which Increase Dissonance

On the basis of exploratory interviews and the model which has been proposed, it is hypothesized that the following factors tend to increase the likelihood of dissonance:

1. Nearness in time to culturally determined point at which decision must be made, *e.g.*, senior year at college.
2. Exposure to malevolent environment, *e.g.*, excessive demands, threats, withdrawal of support, social rejection.
3. High opportunity for change of career.
4. High number of perceived occupational alternatives.
    - a. Perception of few limits imposed by lack of ability or other role requirements.
    - b. Information about extensive range of alternatives.
5. High heterogeneity among perceived alternatives.
6. High demand for certainty of knowledge about alternatives.
7. Elaborate premises in regard to acceptable career decisions.
    - a. Requirement that plan be reversible.
    - b. Requirement that investment in any one career never be lost.
    - c. Long planning horizon, i.e., requirement that decision fulfill long-term criteria
8. Personal inability to suppress or distort premises.
9. Social pressure to postpone decision-making.

Dissonance-Reducing Strategies

The two principal strategies for reducing dissonance are incorporated in the diagram presented. These are:

1. The manipulation of premises. For example, a man may convince himself that he "really doesn't want all the headaches which go with executive positions".

2. The search for and selection of a new occupational plan or position.

Frequently the premises which the decision-maker adheres to cannot be manipulated and a decision cannot be made among available alternatives. The investigators have already noted in Chapter 2 that the following strategies may be employed in this case:

3. Adoption of a very general career plan which does not irrevocably commit the decision-maker to a specific course of action.

4. Postponement of decision. Evidently dissonance can be reduced for short periods by deciding to postpone decisions until some specified time in the future, e.g., "until I see if I pass the examination."

5. Adoption of a short-term career with consideration only of contemporary characteristics of the occupational role.

Long-Term Effects

Some of the factors creating dissonance are transitory; once a decision is made, once the person commits himself, they no longer operate. But other factors are more enduring, an example being gross lack of congruence between a person's premises about himself and the requirements of the occupational role in question.

The dependent variable of most interest to the author is role performance. This can be loosely defined as the length of time which the decision-maker continues to enact an occupational role.

In studying specific career decisions one can assume that the environment of the decision-maker remains constant during the period of the decision-making. But in examining the long-term effects of a series of decisions it has to be recognised that the individual is engaged in constant transactions with the environment. His actions change the environment and, consequently, the subsequent environmental inputs. In addition there are changes in the environment which are relatively independent of the individual's actions, e.g., changes in the labor market. Blau et al (1956) have conceptualized this area.

Also, the individual changes. The contents of his cognitive storage are in flux and he is repeatedly faced with behavioral alternatives. Premises are augmented, re-evaluated, modified, rejected. Thus long-term prediction is exceedingly complex. At present we can only guess about the factors which should decrease the chance of dissonance and thereby increase the likelihood of an individual remaining in a given occupational role for a long period of time. These are:

1. Conformance with and compatibility of the norms and requirements of the occupational role in question. This reduces threats of rejection and other sources of dissonance between an individual's premises and his behavior.

2. Social support of the individual's professional involvement. This augments or reinforces premises consonant with continued role performance.

3. Absence of role alternatives because of
    a. limited range of abilities and interests,
    b. lack of professional qualifications,
    c. absence of competing social roles.

4. Absence of opportunistic, short-run, decision-making strategies.

5. Absence of environmental barriers and restrictions.

Summary

Career development can be described as the accretion of a chain of decisions. The ability to make appropriate decisions then becomes of key importance. But precisely how individuals resolve decision-making conflict efficiently is an open question. The process has received little direct attention. Five possible models of the process were examined: The attribute matching model, the need reduction model, the Economic Man model, the Social Man model, and the complex information processing model. Each was found to have some useful emphasis but most of the possible models involved assumptions not consistent with available research findings or informal observations. Drawing mostly from the complex information processing approach to human problem solving and from interviews with Ss in the process of decision-making the author presented a tentative model of the decision-making process which incorporated Festinger's theory of cognitive dissonance. It was proposed that the reduction of dissonance among a person's beliefs about himself and his environment is the major motivation of career decision-making. The decision-making process is instigated by inputs from the environment which raise dissonance to an intolerable level and terminates when the individual by one of several means which are outlined succeeds in reducing dissonance. Three sets of hypotheses which are based on the model are presented.

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Chapter 4

Career Decision-Making and Personal Values

If the dissonance-reduction model of career decision-making is a valid representation of the process, then personal values become significant variables in career development. An influential group of premises were those which described what the individual regarded as important or, in other words, his values. Statements like, "It is important for a person to contribute something to the community" and, "Money isn't everything" frequently were verbalized in the interviews and were prominent in the reflections of the Ss. It was in anticipation of this importance of personal values that the Allport-Vernon-Lindzey Study of Values was given to the Ss of Phase I in the manner described in Chapter 2. The investigators were particularly interested in whether the scores from the various scales did change over time and, if so, whether these were related to the decision-making process.

Although it is frequently said that scores on personality tests do change over time, there has been little research on the direction of such changes or on the reliability of the scores over a number of successive administrations of a given test. The test-retest studies of personality have been valuable in describing the state of a particular aspect of an individual's personality relative to its state at some previous point in time. Such studies do not, however, provide us with a description of the manner in which this change in personality takes place. For example, we may know that a person's religious values increase in importance by a certain amount between two administrations of a test five years apart. But this does not tell us whether the increase was steady or sudden or whether it decreased at some point in those five years only to increase rapidly toward the end. The number of instances in which such information would be of great value in personality research is obvious.

Knowing about the effect of several successive administrations of a test on the reliability of the test also would be valuable. It is common in American industry today for college seniors seeking positions to be tested as many as five different times. If they change their position several times during their early years of industrial employment they may be tested many more times. It is possible, therefore, that certain instruments which are widely used will be taken over and over again by some young college graduates. Such cases have been reported to the authors. This chapter, therefore, focuses particularly on the effects of repeated administrations of the same test of values. As far as the authors could determine, this was the first research in which the Study of Values had been given more than twice to the same individuals.

Previous studies of the stability or repeat reliability of the Allport-Vernon-Lindzey Study of Values have been entirely of the test-retest variety. This has also been true for most of the other personality measures in existence. One of the few descriptions in the literature of the successive administration of a test to the same individual is cited by Welsh and Dahlstrom in a case history.(1961). These authors reported that scores on the Minnesota Multiphasic Personality Inventory varied with changes in the subjects' personality as indicated by clinical interviews. Cattell (1957) reviewed the literature concerned with personality changes through time, but again most of the studies cited were concerned with test-retest reliability.

Allport, Vernon and Lindzey have determined repeat reliability coefficients for two populations, one after a one-month interval, the other after a two-month interval. The mean repeat reliability coefficient for the Study of Values was .89 for the one-month interval and .88 after two months (1960, p. 10).

Hypotheses

1. Group Differences. First it was hypothesized that there are certain stable differences in values between the sexes and between groups with different occupational aspirations, and that there are pressures on the members of the groups to accept these values. It was expected, therefore, that the patterns of scale scores found in previous studies would be observed in this study. Accordingly, it was predicted, that the men would have higher scores than the women on the Theoretical, Economic, and Political scales and lower scores on the balance of the scales, and that the Ss enrolled in the Graduate School of Industrial Administration (IA) would have higher scores than the engineers on the Economic, Political and Aesthetic scales, the last difference being attributable more to the IA men's graduate-student status than to their association with industry.

2. Between-Individuals Variance. The second prediction was that the pressure on the members of each group to adopt the pattern of shared values would manifest itself in a steadily decreasing variance among the group members' scores on each separate scale. For example, the variance of the Economic scale scores for the sample of ten women should show a steady decrease from the first administration to the last. Hollander (1958) provided a model for predictions in this general area.

But several factors militated against the tendency being strong in this particular study. The time period of seven months was short, and also--for the undergraduates in the sample--it fell at the end of four years of association. The rate of change which results from group influence is probably greater during the early years of college.

Secondly, during the terminal year of education (as it was for all Ss) pressures from non-college sources probably begin to be felt, pressures from family and future professional associates, for example. Because separate individuals may be subjected to different pressures, the effect may be to introduce variance.

Thirdly, for the undergraduates in the sample the groups in question were not highly cohesive. The women were enrolled in a variety of academic departments and the men had several different engineering and scientific identifications. It was not expected, therefore, that an appreciable decrease in variance would be observed.

3. Within-Individual Changes. Jacobs (1957) presented evidence which led him to conclude that "basic values remain largely constant through college." Although this may be true in a gross sense over a four-year period, a different prediction was made in this study. Assuming that during the period the Ss were increasingly involved in career decision-making and that this resulted in their being more involved in securing economic advantage and status than in spiritual or aesthetic matters, the investigators predicted a general increase in the economic and political scores and a decrease in the religious and aesthetic scores.

This prediction was in accordance with the theory presented in Chapter 3 whereby the decision-making process consists largely of the person's trying to achieve consonance or cognitive balance among a set of his actions, beliefs, value statements, and perceived alternatives. In the case of values, consonance would be achieved by accentuating those values which are compatible with his behavior and disclaiming those which are not.

4. Between-Scales Variance. Using the Study of Values as one of his testing instruments, Kelly (1955) obtained results which indicated a tendency for "maturational regression". This occurs when individuals toward either extreme in their scores move with time toward the mean score with a resulting decrease in the variance of the scores. This result is similar to that which occurs in certain psychophysical studies in which the averages of judgments of stimuli in a series show some regression toward the central tendency of that series (Guilford, 1954). These results may not, however, apply to college students involved in career decision-making. In fact, the investigators predicted quite a different effect in the present study.

Again drawing on the theory proposed earlier, it is assumed that during a period of career decision-making the dominant tendency is for Ss to strengthen or make more salient certain of their values and to weaken others. In order to facilitate the decision-making the person has to decide which values are really important to him and which are less so. The usual effect of this process will be to increase the variance among his scores on the different value scales.

The fourth prediction of this paper was, therefore, that the variance among each S's scores on the six scales would increase over successive administrations of the test as each S became more and more involved in the career choice process.

In summary, the various effects which were hypothesized were:

1. A tendency for members of one occupational, educational, or social group to display patterns of values which distinguish them from the members of other groups.
2. Pressure on each S to accept the values of his or her sex and occupational group. This results in decreases over time in variances between group members on separate scales.
3. Pressure on each S to realign his values to make them consistent with his actions, intentions, and beliefs. To the extent that the members of the sample have common needs and similar environmental experiences this results in systematic changes in the mean scores on certain scales for the total sample.
4. Pressure on each S who is faced with career decisions to increase the differentiation among his values, i.e., to increase some and decrease others, with a resultant increase in the variance among his scores. (Note that different predictions are made for the variance between individuals on separate scales as compared to the variance between scale scores for separate individuals.)

Reliability. As part of the research reported, reliability coefficients were obtained for the six scales of the Study of Values and for the test as a whole. These coefficients were estimated separately for the first four administrations, the last three administrations and for all seven administrations.

Results

The means for the three groups averaged over the seven administrations are presented in Table 12. These means did not differ greatly from those obtained for similar groups (Allport, Vernon & Lindzey, 1960). In every case the differences between the groups of Ss were in the predicted direction except for the theoretical scale on which the Industrial Administration men were higher than the engineers.

Table 12

Mean Scores and Standard Deviations Averaged Over Seven Administrations of the Six Scales of the Study of Values

	Men		Men		Women	
Scale	E & S		IA			
N	10		10		10	
	Mean	SD	Mean	SD	Mean	SD
Theoretical	44.60	6.69	47.50	4.75	34.08	4.94
Economic	45.30	5.34	45.81	8.44	40.93	6.49
Aesthetic	35.47	9.10	39.40	9.38	46.44	10.92
Social	33.83	5.46	30.14	5.80	37.98	7.27
Political	44.86	4.83	46.03	4.88	39.48	5.56
Religious	35.77	10.01	30.94	9.63	40.73	7.93

The second hypothesis was not confirmed by the results. This is evident from inspection of the standard deviations given in Tables 15 and 16. The number of between-group-members variances which increased was about equal to the number which decreased.

To check the third hypothesis an analysis of the variance of the scores from each administration was conducted according to a method described by

Grant (1956). This particular method allows for the comparison of curves and provides a test of whether linear, quadratic, cubic, etc., components of trend exist in the data. The results of this analysis are presented in Table 17. The mean scores for each administration are given in Tables 13 and 14 and the curves formed by the means for four of the scales are shown in Figure 2.

The significant over-all trend for the Religious scale indicates that the over-all average scores vary from administration to administration during the series of seven testings. The significant linear component of the over-all trend indicates that the over-all trend is essentially linear (increasing in the case of the Political scale and decreasing for the Religious scale).

The F ratios for between-group means for the Theoretical, Social and Political scales are significant, indicating that the means for these groups come from different populations. That the decreasing linear trend exhibited by the Industrial Administration students on the Aesthetic scale is significantly different from the increasing linear trends shown by the other groups is indicated by the significant F for linear between-group trend.

The significant F for quadratic between-group trend on the theoretical scale appears to be attributable to the fact that while the engineers made higher scores on the middle administrations, the other groups scored higher on the first and last tests and went down in the middle.

Between-Scale Variance. The growth of the variance of each S's scores, averaged over the 30 Ss, is shown in Figure 3; and the results of the analysis of the trend is shown in Table 18. As predicted, the variance increases

Table 13

Mean Scores of Theoretical, Economic, and Aesthetic Scales of *Study of Values* for Each Administration, Grouped by School

Scale	Administration						
	1	2	3	4	5	6	7
Theoretical							
Engineers	43.6	44.2	45.2	44.8	45.8	44.1	44.5
I. A. Men	48.8	47.8	46.4	46.7	47.0	46.9	48.9
Women	35.0	36.9	32.3	33.8	33.0	33.2	34.4
Total	42.5	43.0	41.3	41.8	41.9	41.4	42.6
Economic							
Engineers	44.0	45.4	46.7	45.3	44.9	45.4	45.4
I. A. Men	45.4	45.0	47.0	44.8	44.9	48.1	45.5
Women	39.1	40.3	42.0	40.8	42.2	41.6	40.5
Total	42.8	43.6	45.2	43.6	44.0	45.0	43.8
Aesthetic							
Engineers	34.3	34.7	32.9	35.3	37.0	36.7	37.4
I. A. Men	41.1	38.9	39.1	40.7	40.3	37.6	38.1
Women	45.8	44.7	46.3	46.3	46.3	47.4	48.3
Total	40.4	39.4	39.4	40.8	41.2	40.6	41.3

Table 14

Mean Scores of Social, Political, and Religious Scales of

Study of Values for Each Administration

Grouped by School

Scale	Administration						
	1	2	3	4	5	6	7
Social							
Engineers	34.9	33.9	35.0	34.2	32.1	33.3	33.4
I. A. Men	31.3	30.2	28.8	29.6	30.6	29.5	31.0
Women	39.0	36.2	38.7	36.9	37.4	40.4	37.3
Total	35.1	33.4	34.2	33.6	33.4	34.4	33.9
Political							
Engineers	44.6	44.9	44.6	45.1	43.7	45.5	45.6
I. A. Men	43.5	45.2	46.1	46.6	46.8	48.5	45.5
Women	37.8	40.2	39.6	40.3	39.9	38.8	39.8
Total	42.0	43.4	43.4	44.0	43.4	44.3	43.6
Religious							
Engineers	38.0	36.8	35.6	35.3	36.5	34.5	33.7
I. A. Men	29.9	31.7	32.6	31.6	30.4	29.4	31.0
Women	43.3	41.6	40.9	39.8	41.2	38.6	39.7
Total	37.1	36.7	36.4	35.6	36.0	34.2	34.8

Table 15

Standard Deviations of Scores of Theoretical, Economic, and Aesthetic Scales of Study of Values for Each Administration, Grouped by School

Scale	Administration						
	1	2	3	4	5	6	7
Theoretical							
Engineers	6.53	6.66	6.93	6.81	5.88	6.92	7.12
I. A. Men	6.11	6.35	4.18	6.33	5.39	4.57	5.59
Women	3.41	4.37	4.61	5.31	5.42	5.64	5.85
Total	7.75	7.23	8.34	8.23	8.60	8.27	8.69
Economic							
Engineers	6.07	5.73	5.00	5.14	6.06	4.90	4.50
I. A. Men	8.42	8.02	7.54	8.32	7.75	9.51	9.53
Women	6.33	6.75	6.65	4.19	6.51	7.83	7.16
Total	7.71	7.08	7.09	6.68	6.93	8.29	7.72
Aesthetic							
Engineers	7.85	9.40	9.49	8.80	9.37	8.51	9.68
I. A. Men	8.96	10.71	8.67	10.35	8.57	10.26	8.14
Women	10.80	11.04	10.13	10.26	11.05	11.09	12.09
Total	10.41	11.44	11.04	10.68	10.79	11.00	11.43

Table 16

Standard Deviations of Scores of Social, Political, and Religious Scales of Study of Values for Each Administration, Grouped by School

Scale	Administration						
	1	2	3	4	5	6	7
Social							
Engineers	5.26	5.70	5.59	5.06	5.56	5.90	5.18
I. A. Men	8.24	4.51	3.76	6.36	5.80	6.12	5.80
Women	7.95	6.38	7.17	7.89	6.50	7.17	7.85
Total	7.62	6.29	6.83	7.04	6.47	7.85	6.89
Political							
Engineers	3.90	4.25	5.28	4.50	5.90	4.72	5.26
I. A. Men	5.18	6.72	5.37	4.41	5.76	2.84	3.85
Women	5.38	5.49	5.33	5.14	6.16	6.08	5.36
Total	5.46	6.27	6.25	5.41	7.00	5.99	5.83
Religious							
Engineers	6.86	9.34	9.86	10.30	11.65	10.88	11.19
I. A. Men	9.36	9.03	11.20	8.70	8.66	10.36	10.10
Women	7.11	7.42	6.66	7.64	9.65	9.04	7.98
Total	9.47	9.54	9.92	9.43	11.10	10.69	10.50

Table 17

Summary Table of F Ratios from Trend Analysis of *Study of Values* Scales

Source of Variation	Theo.	Econ.	Aesth.	Soc.	Pol.	Rel.
Over-all Trend	1.32	1.55	1.61	.26	1.69	2.82*
Linear	.24	.82	2.44	.44	4.44*	7.80**
Quadratic	3.04	2.42	.34	1.88	2.67	.01
Between Group Means	16.85**	1.74	1.64	4.78*	5.65*	2.77
Between Group Trends	1.50	.45	1.92	1.06	1.06	1.06
Linear	.62	.07	4.12*	.48	1.08	.99
Quadratic	4.36*	.74	.52	.37	2.04	1.17
Between Individual Means	22.28***	20.80***	66.77***	17.10***	15.93***	52.26***

* $P < .05$

** $P < .01$

*** $P < .001$

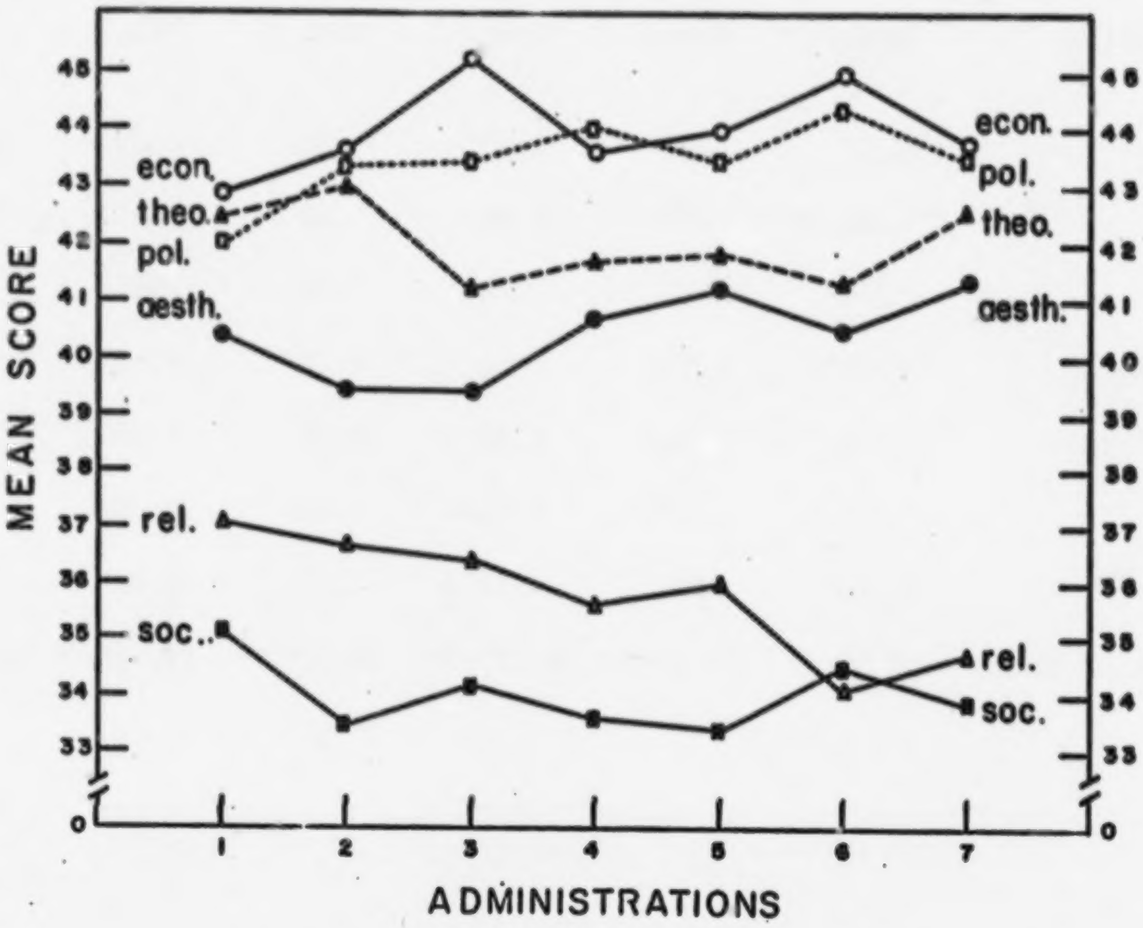

Fig. 2. Means on Political, Economic, Religious, Social, Theoretical and Aesthetic scales for total group (N = 30)

Table 18

Summary of the Analysis of the Trends of the Mean Variances of Individual Scores

Source	df	MS	Error Term	F
Over-all Trend	(6)	(1543.4)	E	(2.30*)
Linear	1	7387.0	E.1	4.22*
Quadratic	1	4.9	E.2	.01
Between Group Means	(2)	(30210.0)	D	(1.19)
Between Group Trends	(12)	(783.1)	E	(1.17)
Linear	2	983.7	E.1	.56
Quadratic	2	1033.7	E.2	1.60
Between Ind. Means	27	25477.4	E	37.91**
Between Ind. Trends	(162)	(672.0)		----
Linear	27	1750.7		----
Quadratic	27	644.6		----
Total	209	----		----

* $P < .05$

** $P < .001$

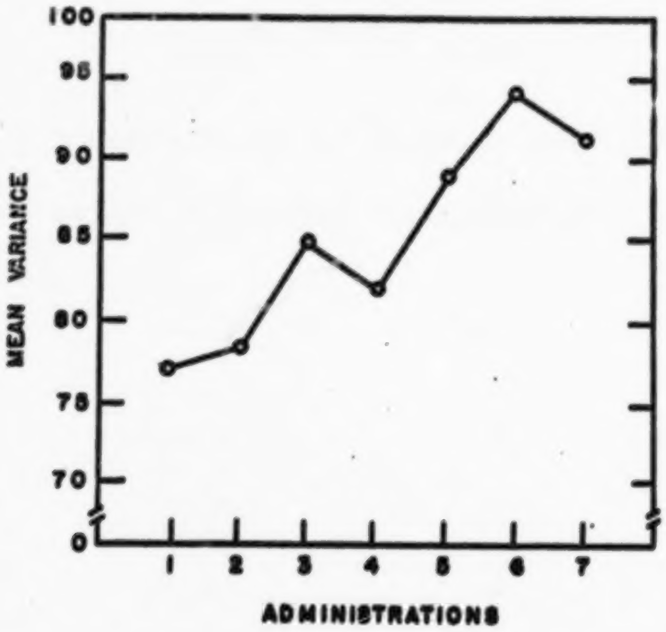

Fig. 3. Growth in the average of variances of each S's scores on the six scales of Study of Values, for each administration (N = 30)

significantly over the seven administrations, in a linear fashion. For 22 of the 30 Ss the median variance of the last three administrations is higher than that for the first three administrations.

Reliability. Some measure of reliability is indicated by the significant Fs for between individual means. This shows that there are significant individual differences in average performance and this, as Grant (1956) points out, will usually be found in the case of reliable measures of performance.

Two different formulas were used to compute reliability coefficients as recommended by Alexander (1947). Since no trend was present for the Theoretical, Economic, Aesthetic, and Social scales, the formula for the unbiased estimate of intraclass correlation was used. However, since linear trend was present for the Political and Religious scales, Alexander's formula for estimating reliability adjusted for linear trend was required. The reliability coefficients obtained for the six scales are given in Table 19. All coefficients are fairly high. The mean repeat reliability coefficient is .817.

Table 19

Repeat Reliability Coefficients for the Six

Scales of the Study of Values

	Administration		
Scale	1-4	5-7	All
Theoretical	.86	.98	.86
Economic	.70	.97	.75
Aesthetic	.92	.96	.91
Social	.70	.90	.75
Political	.70	.85	.74
Religious	.88	.95	.89
Mean	.79	.93	.82

In addition the authors were interested in whether the reliability of the Study of Values increased or decreased after repeated administration. Consequently, the reliability of each scale was also estimated for the first four administrations of the test and separately for the last three administrations, following the same procedure as for the all-administration estimate. These reliabilities are also given in Table 19. For all scales the reliability estimated from the last three administrations is higher than that estimated from the earlier administrations.

Discussion

Judging from the agreement between the scores obtained by the Ss in this study and Ss in previous studies there are stable differences in expressed values which are measured by the Study of Values. But the stability holds only within limits, for the trend analyses indicate that there can be statistically significant changes in the scores during a seven-month period.

On the Theoretical scale the IA graduate students had a higher mean than the engineers, which is not surprising since the Graduate School of Industrial Administration in which the students are enrolled has a strong theoretical orientation. Less understandable is the significant difference in trend between the Aesthetic scale scores for the IA graduate students and the undergraduate students. One possibility is that the increasing linear trend for the undergraduates is attributable to the liberal arts emphasis of the senior year for these students in the particular school in which they were enrolled.

The absence of a significant decrease in the within-group variance was not unexpected since the groups in question probably are not sufficiently cohesive to exert significant influence on the values of their members. This view is supported by the obtained standard deviations for the scores of each group. These standard deviations are not significantly different from those reported in the test manual for much larger heterogeneous groups of students at various universities.

The significant positive growth in the average variance of the Ss scale scores would seem to support the fourth hypothesis concerning within-individual variances. There was, however, a methodological problem in these results. The growth curves of the values happened to line up in such a way that there is no way of being certain to what extent each pressure caused the results. The Political scores started high and increased over time and the Religious scores started low and decreased. It could be argued that this movement alone was sufficient to account for the increase in variance. The counter argument would be that this movement cannot account for all of the strong increases in variance, that some of it resulted from the efforts of each S to increase the differentiation among his values, and that even if there had not been a systematic change in two of the scales the average of the variances would have increased. In any case, how much the "Differentiation Hypothesis" contributed to the results is not clear and the conservative position is to regard the results as neither confirming nor disconfirming as far as the Hypothesis 4 is concerned.

There also exists the possibility that when any group of Ss takes the Study of Values seven consecutive times the variance of the S's scores will increase, regardless of the state of their career decision-making. This should be checked in subsequent research.

The reliabilities which were estimated from the seven administrations are not appreciably different from those reported in the manual for the test. The interesting fact is that the estimates based on the last three trials are higher than those based on the first four trials. The investigators had been concerned about performance on the test deteriorating so seriously that the data from the later administrations of the test would be useless. Evidently this was not the case.

Another possibility is that in the later administrations the Ss adopted a rigid response set, automatically repeating the preferences they had indicated in the previous administration. Two comments can be made here. First, the Ss were requested not to do this, i.e., they were asked "To take each test as if you were taking it for the first time," and the Ss reported that this was what they did.

Second, the investigators computed for each subject the percentage of his responses which were identical to his responses on the previous administration. For the total sample, the mean of these agreements for the first two administrations was 54% with a range from 29% to 74%. Between the second and third trial it increased to 59%, and for the balance of the administrations was as follows: Trials 3 and 4, 59%; 4 and 5, 58%; 5 and 6, 65%; 6 and 7, 69%. Thus there was a sizable variation in responses from one administration to the next, even for the later administrations. These results do not, however, eliminate the possibility that some Ss may have thoughtlessly repeated their responses.

Summary

This study, like a number of other studies in the literature, demonstrated that there are patterns of personal values as measured by the *Study of Values* which distinguish the members of one occupational, educational or social group from another. But the study also demonstrated that there can be significant changes in the values of the members of a group. These changes were hypothesized to result from the need of each S to keep his values consistent with his actions, intentions, and beliefs. When most members of the group engage in similar actions and have similar environmental experiences, significant changes in the group means result.

A tendency for Ss to increase the differentiation of their values during decision-making was hypothesized and, in fact, the variance of the Ss' scale scores significantly increased in the course of the seven administrations. But this may have been attributable wholly to predicted changes in certain values and not an independent effect.

No evidence was provided for the hypothesis that group pressure will tend to decrease the variance among the scores of group members on single scales.

Repeat reliability coefficients computed for the six scales ranged from .74 for the Political scale to .89 for the Religious scale with a mean of .82. That the reliabilities estimated from the later administrations were higher than those based on the earlier administrations suggests that test performance did not suffer from the seven successive administrations of the test.

PRECEDING PAGE MISSING

Chapter 5

A Measure of Subjective Indecision

In studying the process of career development, one is faced with the problem of determining exactly what it is which gets developed. Is it interest which develops. Or is it ego involvement, certainty, clarity, specificity, identification, commitment, or the realness of the individual's plans. Without analyzing each of these alternatives, the authors' propose that there probably is no single global term which is generally appropriate, that career development involves progressive changes along a number of dimensions, and that which aspect of the development one focuses on depends on the objectives of the researchers' efforts. Which measure or measures provide the best description is at this point largely an empirical question.

The dimension of career plans which is of interest in this chapter is their indecision. This is defined as the extent to which a person is undecided about the nature of his future occupational activities.

Obviously the time period in question has to be specified in order for the term to have any precise meaning. A person may be highly certain about his immediate plans (what he will be doing tomorrow, for example) or his short-term (e.g., next year) plans, but in a complete quandary about his long-range (e.g., five years hence) plans. In the present research the time period in question was partially controlled by selecting Ss all of whom were in their last year of formal education and, therefore, forced to make plans for the following year. Even so, the investigators had to keep in mind the fact that the Ss' plans differed in range.

Implicit in this terminology is the assumption that career plans are initially vague and unstructured, and that one aspect of development consists of the planner giving structure to his vague ideas by narrowing the field of career alternatives.

The definition does not specify that the plans which the person arrives at are necessarily "good" in the sense of being the most appropriate plans for the individual in view of his needs, abilities, and other personal characteristics. This is an important question but trying to incorporate a factor of objective appropriateness in this definition seriously confounds an already very difficult definitional problem.

In other words, the way in which the investigators defined indecision allows for the possibility that a person could be highly certain about plans which a panel of judges might regard as highly unsuitable. As will be explained shortly, however, if the S himself has doubts about the appropriateness of his plans, then indecision is scored if these doubts manifest themselves in qualifications or verbal statements of uncertainty.

Also it is true that absence of indecision is not necessarily a sign of vocational maturity in Super's sense. A child may be certain about his career plans; an adult may be in a state of high indecision. Again, however, the general course of career development is believed to be in the direction of decreasing indecision.

Lastly, it is not necessarily true that an individual who is certain of his plans is highly committed to them or enthusiastic about them. But, given a large sample of individuals, committment and absence of indecision are likely to be correlated since most individuals cannot be enthusiastic about uncertain plans. This is a major reason for the authors' interest in indecision as a variable. At least some minimum degree of decision is required for effective occupational performance. Absence of decision was observed by the principal investigator to be an important cause of under-achievement by graduate students. A valid measure of subjective indecision should have wide clinical, industrial, and social psychological applicability and need not be limited to the particular experimental use for which it was designed here.

It was with these thoughts in mind that the investigators undertook the development of a measure of subjective indecision in order to have a quantitative estimate of just how indecisive a person feels about his career plans.

The Development of the Measure

The immediate aim of this work was to develop a scoring manual which could be given to untrained raters, and which _by itself_ would enable them to rate typed protocols of the recorded interviews obtained in Phase I for the degree of subjective indecision manifested by the interviewees. These interviews were intended to explore the subjects' career decision-making processes, but the measure could have wider applicability with no modifications.

There are three separate subscores of indecision from which a summary score is derived. This breakdown stems from the observation that there were three readily recognizable ways of expressing subjective indecision in verbal behavior. The three broad categories which are scored in this indecision measure are:

1. The number of alternative courses of action under consideration by a person.

2. Statements of qualification regarding these alternatives, e.g., "...if the salary is sufficient."

3. Statements indicating doubt, indecision, or a need for information, e.g., "I don't know...", "I think...", etc.

The first of these and the third, are the type of categories which might be found in any content analysis scheme. The aim is to measure indecision using what the subject says in the interview. The second has to do with the form of what the interviewee says and is somewhat more indirect than the other two categories. Concern here is for how a subject makes a statement about a career alternative. Are his statements simple declaratives, or are they immediately qualified by weakening statements?

The Number of Alternatives. The first category of this indecision measure is the number of possible alternatives perceived by a subject. Counting the number mentioned in an interview seemed to be one way to measure roughly the amount of indecision subjects felt during the career decision-making process. It was reasoned that at least two alternatives must exist for indecision or conflict to be present for an individual, even though one may be positive while the other exists only as its negative. Extension of this notion suggested that the greater the number of alternatives, the greater the indecision actually present since there could be more combinations of 2...n alternatives among which a subject has to choose.

Only alternatives mentioned by the subject during interviews are counted. It is also necessary that he perceive them as within his possibility space. For example, a senior civil engineering student who has gone in debt to finish his studies might mention that the work of theoretical physicists sounds interesting and, if given the choice, that he would become a nuclear physicist. This would be classified as wishful thinking (unless the S indicated he was trying to solve the financial problems), and would not be counted as an alternative.

The ultimate criterion for inclusion in the alternatives category of the measure is an affirmative answer by the scorer to the question, "Does this course of action lead the subject to a conflict in his decision-making at this moment in time?"

It follows from the above criterion that alternatives must be mutually exclusive with respect to time and place. In a given interview, each should be counted only once. The number of times an alternative is mentioned may have implications for the strength of a subject's approach tendency, but not for the existence of the alternative, which is considered the important variable in this measure. We are interested in how many conflicting alternatives exist, and not in the relative strength of each as indicated by the number of times it is mentioned (if, in fact, relative strength is measured by such a count.)

During pilot interviews most subjects reminisced about past decisions relevant to their careers. This created a problem of categorizing career alternatives considered prior to the terminal year of formal education. It was decided not to count past alternatives mentioned if the interviewee made a definite, unqualified statement to the effect that he had rejected them. If, however, the S qualified his statement of rejection, it was inferred that indecision still existed for the subject and the alternative was accordingly scored. Thus the existence of lingering doubts which could cause present indecision was recognized.

Qualifications. It was assumed that a person in a state of indecision simultaneously sees important advantages and disadvantages associated with each alternative in his possibility space, and unlike the "low indecision" S, the disadvantages loom large in his image of the alternative. A type of statement indicative of such a condition is the qualification, defined as a statement which follows an expression of affect or intention and tends to weaken or limit the original statement. An example would be, "I'd like to work in a candy store, but I'm allergic to sugar." Indecision regarding career plans was inferred when a person made statements about them which he immediately modified in such a way that they became negative or less strongly positive.

Considerable care in defining qualifying statements was necessary. As is so often the case, it is easier to define what such statements are not. Pro and con statements, and simple descriptions of the attributes of career possibilities were excluded in this measure, since the former can be enumerated by most intelligent people on practically any topic, and the latter, unless related to a person's affective or cognitive state, seem of little value in quantifying a state of indecision. Lists of pro and con statements do not necessarily demonstrate an immediate, momentary conflict in the way that statements which are immediately qualified or modified do. This is similar to the difference between discussion among friends of an important decision and the actual making of the decision, when the "moment to decide" has come. In the former case, it is a relatively simple matter to list pros and cons carefully, exhaustively, and rather objectively; in the latter, there is often considerable vacillation when under the pressure to decide.

In addition, a fine line was drawn between descriptions of the environment and descriptions which included aspects of the subject's cognitive and affective processes. For example, "I decided against going into management, although I like the security which such jobs offer," would be counted as a qualification since the later part is a positive statement about a rejected alternative and relates the individual's feelings to the job as perceived by him. "I think I will go into teaching. The hours are good, but of course the pay is not." This would not be counted, on the other hand, since the statements include a negative statement about a positive alternative, but the negative portion of the qualifying statement is unrelated to the subject himself; it merely describes the teaching profession. The first quotation would also be the signal for the scorer to count "management" as an alternative for the reasons mentioned previously, namely that qualifications are still made when talking about the supposedly rejected alternative.

One important final point was that repetitions of qualifications were counted every time they occurred, since such repetition was considered to be evidence of intensity of indecision rather than duplication, as in the number of alternatives.

It may be objected that amount of verbal qualification is a personality variable, and may in fact be an academic trait, or even a mark of intelligence. Lacking empirical data on this point, the investigators adopted the view that whereas the practice of qualifying or expressing doubt may be a personal habit, it still is probably indicative of an indecisive person who has indecisive plans. In any case, such a habit will merely result in raising the absolute number of qualifying statements for certain individuals compared to those who are not "chronically indecisive". The relative changes over time of the indecision score for a given subject is the variable of major interest in the present research.

Doubt Statements. Finally, a third aspect of indecision in career planning was hypothesized to be the number of times during an interview that a subject simply stated the existence of indecision. An example of this category would be, "My plans for the next year are pretty much up in the air." The more of such statements made by a subject, the greater his Indecision score, using the measure proposed here. Candor and honesty is assumed; if a person is indecisive or unsure of his career plans, he will say it. As a content analysis technique, this measure is closely related to the number of alternatives perceived, the same advantages and disadvantages existing for both measures. Both are attempting to get at the same aspect of an individual's momentary state (i.e., the degree of indecision) via routes which are slightly different. The number of qualifications measure is more indirect, and will likely be most useful in bringing to light the indecisiveness of subjects who are prone to keep such information guarded from others.

A copy of the final manual is provided in the Appendix together with a sample interview protocol, appropriately annotated to show items which would be included in the three categories of the measure.

Method

Each of the seven interviews with the 30 Ss of Phase I were scored for Indecision. As described in Chapter 2, the interviews lasted at least one-half hour, and were tape recorded with the knowledge of the Ss. The typescripts required a total of 1809 double-spaced pages. The interviews were non-directive except that the interviewers made sure that certain specific questions were asked each interview and that the interviews lasted at least one-half hour. The reasons for this technique were discussed in Chapter 2.

Each interview was scored by two raters working independently. Not only did the scorers not communicate with each other, but also they did not communicate with the investigators except in writing. Their only training consisted of reading the manual and scoring the practice interviews given in it. The written questions asked by the scorers were answered in writing with the answers being incorporated in the scoring manual.

In order to have a score for purposes of analysis the investigators were faced with a number of alternative ways of combining the scores of the two raters or of using the scores of one of them. It was decided that wherever the two raters were in substantial agreement the mean of their scores would be used, and where there was serious disagreement, the interview would be rescored "blind" by a third rater with the mean between the third score and the closer of the original scores being used. "Serious disagreement" was defined as a difference greater than:

a. 2 on the A scale

b. 3 on the Q scale

c. 5 on the D scale

In line with this procedure, 93 of the 210 interviews were rescored by the third rater.

The reliability of the scores was estimated from the scoring by the original raters by means of Guilford's formulae (1954), no attempt being made to estimate how much the efforts of the third rater may have increased the reliability.

In addition, in order to show how the Indecision score changed over the course of the interviews, the mean I score for each group (the women, the undergraduate engineers, and the graduate students in industrial administration) was computed for each set of interviews from the first to the seventh. For these purposes a composite score (I_c) was computed consisting of the sum of the number of alternatives, the number of qualifications and the square root of the number of doubt statements, the square root transformation being made to make the distribution more nearly normal than the somewhat skewed distribution of the raw scores.

The following predictions were made in regard to the change in I_c.

1. The first interview would have a higher score due to the "getting acquainted" nature of the interviews; subjects normally went into lengthy discussions of their past history, and short and long-term plans. Much of this discussion centered around their values; in later interviews this material was not normally covered by subjects unless changes in their plans or values had occurred.

2. After the initial high score, the scores would be relatively low, rising in the spring term as on-campus job interviews were begun. Indecision was not expected to be fully manifest until the pressure to make career decisions was felt by subjects.

3. Male subjects would have higher scores than females, due mainly to the greater importance of career decisions in the lives of "bread-winners".

4. It was predicted that indecision would be highest just before decisions were made, and would drop after decisions had been made. This hypothesis was derived from the dissonance-reduction aspects of the theory proposed in Chapter 3. A decision regarded as committing by the subject would be preceded by lively consideration of premises and the attributes of career alternatives. This would be reflected in high I_c scores. Following the decision, and a consequent commitment to a set of career plans, premises, and attributes, no further adjustment should occur if a satisfactory matching of premises and career attributes had occurred.

The testing of these hypotheses was not the main aim of this study. They are presented here to give additional insight into the kinds of variables which may affect the subjective indecision measure as it now exists. The significance of the trends was tested by means of Alexander's General Test for Trend (1946).

Results and Discussion

Reliability. The estimated reliabilities are given in Table 20. Two measures were computed: One on all the scores of all the subjects, and one on only the last 49 interviews scored. It was hoped that this latter measure would indicate the degree of agreement which could be obtained after the raters had considerable practice.

Table 20

Rater Reliability, Composite Indecision (I_c)

For one rater ($\bar{r}_{11}$)

	All scores	Last 49
Alternatives	.36	.42
Qualifications	.08	.20
Doubts	.69	.67
Composite	.50	.51

For two raters ($\bar{r}_{22}$)

	All scores	Last 49
Alternatives	.53	.60
Qualifications	.16	.34
Doubts	.81	.80
Composite	.67	.67

The agreement is only minimal. Only the Doubt score and the Composite score show an acceptable degree of reliability. The reconciliation of the original scores undoubtedly eliminated errors. The scores of the third rater were compared with those of the first two raters with the finding that in 79 out of 93 interviews there was close agreement between the third rater and one of the two, all of which suggests that the other rater may have been quite careless in making judgments.

As expected, the three components of the measure of indecision are correlated, the average intercorrelation being approximately .60. When, for a given subject, the number of alternatives increased, the number of doubt statements tended to increase and also the number of qualifications. A subject might have said, for example, the following: "I visited a company yesterday which looks good, but not as good as the company I'm now considering most seriously. What I need is more information about it." This would be scored as 2 alternatives, one qualification, and one doubt or need-for-information statement.

Change During Year. The individual and mean I_c scores are given in Table 21. It can be seen from Figure 4 that first interviews did give higher I_c scores for all three groups, supporting hypothesis #1. A correlation of only 0.53 was found between number of pages in an interview and I_c score, and this correlation drops to .06 when the first interview is omitted, suggesting that length of interview was not an especially important determinant of how indecisive subjects appeared. A sample of 35 interviews showed a correlation of 0.83 between number of pages in an interview and "career pages", the latter being defined as any page containing discussion by the subject of his career plans or decision-making. It would appear that subjects did spend a good deal of interview time discussing these phases of their lives but that this contributed little to their Indecision score.

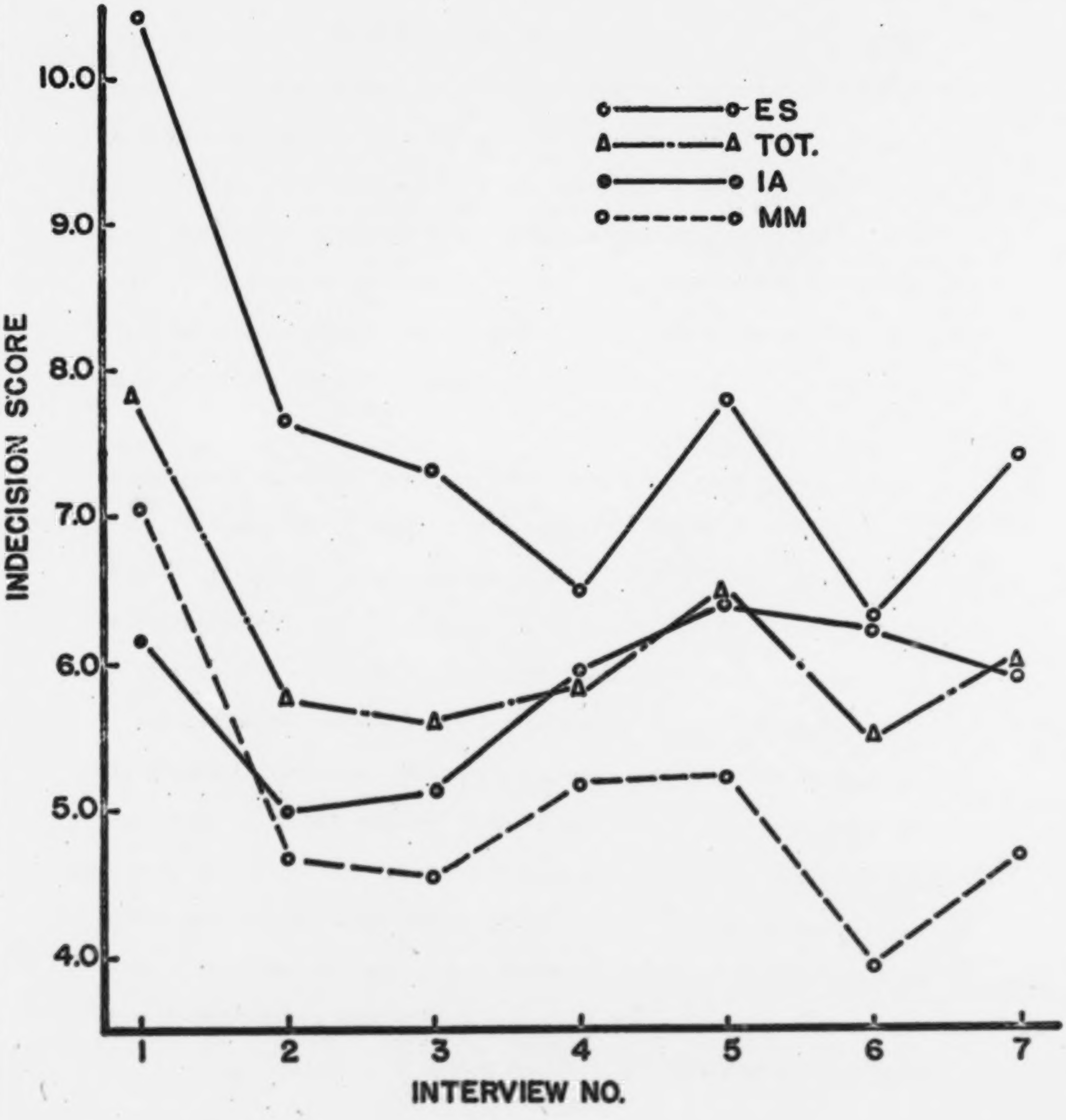

Fig. 4. Means of I_c Scores for Each Interview by Sub-group.

Table 21

Individual and Mean I_c Scores by Colleges

Engineering and Science

Subject	Interviews 1	2	3	4	5	6	7
1	6.8	5.0	3.0	4.5	8.0	6.1	5.0
4	15.3	10.2	11.8	7.1	12.9	13.0	19.9
7	7.4	5.5	5.5	6.1	5.5	5.5	7.1
12	7.5	2.0	7.5	8.9	6.2	3.5	7.0
15	20.1	13.8	9.5	9.0	9.7	7.0	6.8
19	11.5	7.0	6.0	3.0	11.6	3.5	8.1
20	10.6	8.6	9.0	6.6	6.2	6.1	5.1
24	9.0	4.5	5.0	8.1	8.6	5.5	3.0
28	10.5	9.6	10.3	3.5	2.0	5.1	5.5
30	5.0	9.5	5.6	8.1	7.5	8.0	6.8
Mean	10.4	7.6	7.3	6.5	7.8	6.3	7.4

All scores are means of two raters.

Table 21 (cont.)

Industrial Administration

Subject	Interviews						
	1	2	3	4	5	6	7
2	7.0	3.0	4.0	7.0	3.0	6.0	4.8
3	2.0	7.0	4.0	9.5	7.4	12.9	6.1
5	5.5	2.0	4.0	2.0	2.5	4.5	6.0
6	4.0	10.5	11.5	7.0	11.5	7.9	8.2
8	7.2	7.0	6.0	6.5	7.1	7.1	9.0
11	5.4	5.8	5.5	4.8	8.9	7.0	5.0
17	6.5	2.5	2.5	2.0	6.0	2.5	4.4
18	5.0	7.0	3.5	11.0	7.1	4.1	7.0
22	4.0	3.0	4.0	4.0	2.5	5.5	4.5
25	15.3	2.0	6.5	5.5	8.5	5.0	3.5
Mean	6.2	5.0	5.2	5.9	6.5	6.3	5.9

Table 21 (cont.)

Margaret Morrison

Subject	Interviews						
	1	2	3	4	5	6	7
9	7.1	7.1	6.5	8.0	10.0	6.5	7.1
10	4.0	1.5	3.5	5.5	2.0	2.5	3.0
13	9.0	2.5	4.5	7.0	7.0	5.0	6.8
14	9.5	3.5	4.5	5.5	2.5	4.5	6.0
16	5.8	4.0	1.5	4.0	2.5	2.5	2.0
21	3.5	2.5	2.8	5.0	2.0	5.3	6.0
23	4.0	5.5	4.6	4.0	6.0	1.5	4.0
26	16.1	11.5	11.6	6.3	6.5	5.0	5.0
27	4.0	4.0	3.5	5.0	10.7	4.5	4.0
29	7.5	5.0	2.5	1.5	3.1	2.0	3.3
Mean	7.1	4.7	4.6	5.2	5.2	3.9	4.7
Total mean	7.9	5.8	5.7	5.9	6.5	5.5	6.0

Table 22

I_c vs. Number of Pages

Interview	Scores	Pages
Margaret Morrison		
1	7.1	13.3
2	4.7	10.8
3	4.6	10.0
4	5.2	8.9
5	5.2	6.7
6	3.9	5.9
7	4.7	8.7
Engineering and Science		
1	10.4	13.4
2	7.6	10.3
3	7.3	9.3
4	6.5	8.3
5	7.8	7.8
6	6.3	7.0
7	7.4	8.1
Industrial Administration		
1	6.2	8.9
2	5.0	6.5
3	5.2	6.6
4	5.9	8.0
5	6.5	8.2
6	6.3	6.8
7	5.9	7.4

Each entry is mean for 10 subjects

$r = 0.529$*

*When first interview is left off, the $r = 0.064$

Table 23

"Career Pages" vs. Total Pages

Subject	1	2 -	3	4	5	6	7	
22	5	5	5	5	5	3	6	Career
	5	5	7	6	7	5	8	Total
23	10	3	9	5	7	5	5	Career
	15	9	16	7	9	6	9	Total
24	11	7	11	4	7	4	5	Career
	16	11	12	5	7	6	5	Total
25	10	3	4	2	3	2	1	Career
	12	7	7	5	5	6	4	Total
28	8	4	9	5	3	4	6	Career
	9	8	9	5	3	4	8	Total

Criterion: A page is a "career page" if anything related to his career is mentioned by the subject.

$r = 0.827$

The sharp drop in I_c scores after the first interview supports the second hypothesis. As can be seen from the trend test summary table (Table 24) the quadratic component of the overall trend was significant at the 0.001 level of confidence. Figure 4 shows this drop clearly in all three groups of subjects, and in the mean scores for the total sample. Also to be seen in Figure 4 is the rise in all undergraduate Indecision scores between the fourth and fifth interviews. This period coincided with the beginning of job interviews on the Carnegie Tech campus for the undergraduate (ES and MM) students.

Table 24

Trend Analysis, Composite Indecision

Summary Table

Source	df	ss	ms	F
Over-all trend	6	119.45	19.91	3.37**
Linear	1	4.10	4.10	.41
Quadratic	1	939.34	939.34	49.41***
Between group means	2	242.69	141.34	5.06*
Between group trends	12	63.90	5.32	.90
Linear	2	15.42	7.71	.77
Quadratic	2	45.55	22.78	1.20
Between Ind. means	27	754.09	27.93	4.72***
Between Ind. trends	162	956.86	5.91	
Linear	27	271.29	10.05	
Quadratic	27	513.30	19.01	

* $p < .05$

** $p < .01$

*** $p < .001$

Ind. = individual

For the graduate (IA) students indecision began to rise between the second and third interviews. The fact that these students were taking job interviews throughout most of the year is no doubt connected with this rise. Carnegie Tech's Placement Office holds a special Fall semester interviewing period for graduate students only. The effect of such job interviews is clearly a potential influence on Indecision scores, since these interviews may present specific career alternatives to students and stimulates concern over advantages and disadvantages of the careers presented by the interviewers.

All groups showed a sharp drop in I_c scores after the fifth interview. This was not predicted specifically by any of the hypotheses, but if decisions were in fact made by most subjects between the fifth and sixth interviews, then this observation would tend to support Hypothesis #4. It would be remarkable if all subjects made clearcut, committing, career decisions at the same time. The gradual buildup of I_c scores and the sudden drop deserve further investigation as a provocative pattern.

The final slight rise in scores on the last interviews shown by the engineers and the women is also provocative and unexpected. It may be due to some of these subjects' not yet making decisions by the end of the year, giving very high indecision scores in the last interview. The few subjects who found themselves in this position may have been sufficient to raise the group means for the two relevant groups. The graduate group did not show the same pattern on the final three interviews.

Hypothesis #3 concerning male-female differences was supported. The trend test shows the group means to be significantly different ($F = 5.06$, p .05). Group trends were not significantly different, indicating that the overall pattern of I_c scores was the same for all three groups. Both male groups were higher than females on all interviews but the first. The agreement of this result with common attitudes about the relative importance of careers to men and women constitutes some support for the Indecision measure's validity. If the scoring had resulted in data opposed to such common attitudes and the data available (Rosenberg, 1957) there would have been reason to suspect the validity of the Indecision measure.

Summary and Conclusions

Subjective Indecision was proposed as a variable which plays a central role in career development. Analysis of recorded interviews indicated that three measures would serve as indicants of indecision: (1) the number of career alternatives mentioned by the S, (2) the number of times the S makes qualifying statements about alternatives, and (3) the number of times he expresses doubt or indecision about his career.

As a result of the work reported in this chapter, we can make several statements about the measure. Clearly, there is need for additional work on the scoring manual itself. Raters reported most difficulty in making decisions regarding inclusion of items in the Q category (qualifications). The scores obtained are highly dependent on the care which the rater takes. It is difficult to find all instances of A, Q, and D statements and careful, conscientious raters apparently are required to accomplish this. If this personnel requirement is satisfied, the reliability of the scores should be considerably improved. The between-rater reliability reported in Table 20 is low, but it may have been somewhat underestimated. The significance of the "Between Individual Means" term in the trend test summary table is indicative of a reliable measure, as pointed out by Grant (1956).

A trend analysis of the Indecision scores for the seven consecutive interviews confirmed the predictions that more indecision would be expressed in the first interview but it would fall sharply and then build up to a high point in the spring term during the period of employment interviews, that males would have higher scores than females, and that indecision would drop after job decisions were made.

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Chapter 6

George Jenkins

A Case Study in Career Decision-Making

"George Jenkins" is the fictitious name of one of the thirty subjects of Phase I. In this chapter the typescript of those parts of his interviews which concerned his career planning are presented, with a minimum of editing. Also, some of his test responses are summarized. The major purpose of the chapter is to present a complete picture of the career decision-making of a single subject, also with a few interpretive remarks. At the end of the chapter the interview is analyzed and some theoretical concepts are presented.

Jenkins is not necessarily typical. His case was chosen for exposition because it is a particularly graphic example of decision-making conflict and Jenkins was a highly cooperative and seemingly accurate reporter of his feelings and cognitions.

Perhaps the best portrait of Jenkins was provided by himself when, as part of his first interview and test session, he was asked to write "the first ten things you think of in answer to the question 'WHO AM I?'"[1] His responses were: 1. "a man", 2. "a man with a mind", 3. "a student", 4. "George Jenkins", 5. "an ex-Naval Officer", 6. "one of three children", 7. "born of Illinois farm parents", 8. " an individual with ambition", 9. "holder of a scholarship", 10. "an average student".

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[1] This was the so-called Ten Statements Test. It and the other instruments used are described in Chapter 2.

Jenkins was above average in intelligence but not exceptionally so. His Otis I.Q. score was 129. On the Advanced Test for Graduate Students in Business his total score was 544 with a verbal subtest score of 28 and Quantitative score of 34. Compared with his classmates these scores were somewhat below average. He took the tests three years after completing his undergraduate work (after being in the Navy for three years), which caused him to regard the scores as being substantially lower than they would have been otherwise.

In completing the Job Characteristic Test, he said it was extremely important to him to have "a chance to exercise leadership" and "not very important" to have "a stable, secure future". In the first interview he stated that his intention was not to go on for a Ph.D. as several of his friends planned to do. Thus, as the authors frequently observed in interviewing other subjects, he knew of one thing he did not want to do.

This is one strategy for decision-making, i.e., to isolate a set of alternatives and then proceed to eliminate alternatives from the list until only one remains. We shall refer to this as selection by elimination.

The rejection of Ph.D. work left Jenkins with two alternatives: A line position or a staff position, both in an industrial setting.

In the second interview, however, he reversed himself "by 180°" and reinstated the alternative of going on for a Ph.D. in business administration, followed by a more academic career, or one in consulting work. In the balance of the interviews the S struggled to decide between the two: The life as an expert with doctoral training and the life of a businessman. Without describing this struggle further at this point the typescript of the interviews will be presented. Interjected at a number of points are comments on the S's decision-making in an attempt to relate it to the authors' observations of other Ss.

Interview One

Background and Momentary State

INTERVIEWER George, tell me a little about yourself.

SUBJECT To start with an important fact, I'm the first individual from my family to attend college. I come from a farm family in Illinois. I have a brother older than myself that is farming..., and a sister... During my childhood I had very little background of various professions or careers outside the agricultural area. This is true up through high school. Consequently when I graduated from high school I knew little or nothing for all practical purposes of what career opportunities were available. At this time I had considered going into some phase of agriculture; perhaps as a county extension agent or farm manager type of job. The reason for this, I would assume, is that I had no contact with anything other than agriculture and those connected with agriculture.

The decision to study engineering.

I decided to study engineering...primarily through the influence of my high school principal who took an interest in me during my junior and senior year. We discussed various alternatives and concluded that I had sufficient background in mathematics and my grades were high enough that I could make the grade in engineering. For some reason this high school principal had a high opinion of the state college which has a relatively high academic rating in the area and offers a good engineering program. So, the decision was made to go to college and study engineering with no real career thought in my mind. I thought that mechanical engineering sounded good; it sounded kind of spectacular and interesting so this is what I thought I would do. Well, I wasn't sure, so I enrolled in what was called a general engineering course at State.

> It would give credits in all phases of engineering and essentially it's an industrial engineering type of program.

This is an example of a decision-making strategy frequently observed by the investigators. When faced with a dilemma the *S* chooses a course of action which does not commit him to a specific course and allows him to make a free choice at some later date. It is a way of postponing decisions.

A closely related strategy is what the investigators came to call the umbrella approach. Here the *S* chooses a single course of action which encompasses all the alternatives among which he is in conflict. For example, the *S* who cannot decide between a career as a professional sociologist and a career in industry resolves the conflict by selecting a career as an industrial sociologist.

> I decided after having some contact with the other phases of engineering - getting an idea of what they were, what engineering was in general - ...that I didn't want to become a mechanical engineer and I really didn't have confidence in my ability to master the subjects for electrical engineering or chemical engineering, etc., so I was quite happy and content, as you will, in the general engineering curriculum.

It is clear that he did in fact have the ability to master any of the engineering specialties, which suggests that this belief was a rationalization for his decision-making, a dissonance-reducing mechanism.

> Well, I think that no real thought of a career really was in my mind while I was in college. I was studying a course of study, mechanically going to classes and absorbing information with no real thought in mind of what was to come in the future other than I'd get a job of some sort and I'd have a family of some sort and I'd live in some sort of community. No real thought.
>
> I was involved in extra-curricular activities at State. I felt that this was a broadening experience.

Interview 1

> More background information - I didn't study excessively hard as an undergraduate and consequently my grades weren't spectacular although I did graduate in the upper half of my class.

Since Jenkins had the ability to perform well this would seem to be an instance of low motivation in the absence of an occupational goal.

> A real thought about careers started to come to me about the last semester of my senior year when I started interviewing for jobs. And I think that I could look back and say that this would be the most educational period, as far as careers are concerned, that I have experienced. Through talking to various companies and taking several plant trips and studying some of the information available I found that all sorts of career opportunities were available in the engineering field which I had my background in. I had made the decision not to accept a job immediately upon graduation because I had been enrolled in the NROTC program and I received my commission with my BS and I was committed to active duty two weeks after I graduated from school. Not being certain of what type of job I wanted to do - staff or line; not really knowing the difference between the two at this time, really; I just didn't feel that I wanted to commit myself within a company although I had several offers.

Again Jenkins postponed his decision by adopting a course which enabled him to make a free choice at a later date, rationalizing this action by saying he needed more information about the difference between the two alternatives.

> I was in the Navy as an officer for three years. The first year and a half found me at Pensacola in a naval instructor's capacity.

* * *

> I think that I really started considering the career opportunities during this time...
>
> To backtrack a little bit. During the last month of my undergraduate college I started thinking about graduate work. Nothing real serious at first.
>
> I better go back a little bit more for some more information.

His interest in people.

I did have another career in mind as an undergraduate. I had the opportunity to be an advisor in the dormitory for my junior and senior years, during which time we worked quite closely with a sociology major. A fellow that had attained his Master's degree in sociology was running the advisor's program on the dormitory. I worked quite closely with people and I became quite interested in people and sociology and that type of endeavor. I had been committed, more or less, to the scientific area, having studied engineering, and I would have thought at this time I would like to combine my engineering background with sociology and perhaps become an industrial sociologist. Labor relations kind of interested me at this time also and I took a course under a professor back there that was quite interesting although I really didn't know anything about it. It kind of interested me. So I talked to several professors and I took several psychology tests - ability tests and interest tests - to determine for myself whether I had the capacity to do graduate work or not. After taking these battery of tests I was assured that if I decided to go on to graduate work I had the mental capacity to handle the work, if I had the interest. So I wrote to several schools and got their catalogs at this time...

I When you thought first of graduate school were you thinking on the line of engineering graduate school or was it sociology right from the beginning?...

S Although I was interested in engineering and I did average work in engineering I felt at that time that I really didn't have the interest in mechanical things to make a real success in the engineering field in strictly technology applications. And so, consequently, I wasn't thinking in terms of training in industrial engineering. No, I wanted to combine this engineering background with something else.

Well, I got these catalogues and I looked through them. I looked at the catalogue particularly from Carnegie Tech, where I am now going, and this was a business school. Well, nothing was done. No decisions were made or no follow up letters were made at this time.

I started thinking seriously about some of these graduate school opportunities. I decided that I wanted to go to graduate school for a couple of reasons.
1. I just felt that the BS or BA now is, right or wrong, becoming more or less what a high school diploma

was maybe 20 or 30 years ago and I just felt that in order to be competitive in the future some advance training would be necessary and I thought it would be wise to get a Master's degree. In addition, I guess self satisfaction was another motive for wanting to go back to school; the fact that I would have prestige in having it, perhaps. I don't know.

Another experience: I was active in a church youth group during the time I was at State and during my first year in the Navy...I became associated with the national organization of this church youth group. We had meetings...once a year for what they called the international board of governors, representatives from all over the country. During this period of time I was elected international president of the organization and served about ten months from January to the last part of November, I guess it was,...And this is where I developed my interest in management actually. I really think this is perhaps the most important thing to steer me toward management in general and I imagine that this coupled with engineering background led me to industrial management, industrial administration.

* * *

I had the opportunity to deal with people with what I considered to be kind of a high level position and capacity and I could see how acts on the part of a certain leader or manager could have far reaching effects and the handling of people in situations were very very interesting to me and I kind of correlated this with management responsibilities in industry.

Well, after having had this experience as international president of this youth group I went aboard ship and I started to think more seriously of the future.

* * *

...I qualified as an officer of the deck after about ten months and pressure from above let up at this time and two months after that I took over my own department. I had about 40 men working for me there. And I really enjoyed this. I enjoyed this experience more than anything else. I had lots to say about what went on. I was telling people what to do. This is management, I guess. And I guess this kind of crystallized my thoughts concerning management.

Success as a
leader.

Interview 1

> So again I started writing letters about a year before I got out of school and I started to make definite decisions then. I obtained catalogues from several schools.
>
> * * *
>
> A word might be important here why I chose...I was accepted at both schools and I chose Carnegie Tech because the program outlined in the catalogue indicated that the course of study was designed for engineers again, my previous training, and I wasn't sure yet of exactly what area of management I wanted to go into. The other catalogues - the catalogues of the other schools - allowed for you to have a major in finance, a major in marketing, a major in accounting. I didn't feel that I wanted to specialize this much at this time so I guess that I'm still in a state of considering but I'm narrowing down my career choice.

I You decided then that you didn't want to lose your engineering in a sense.

S Well, I guess so. I've invested four years of time and money in engineering and I guess I'd just kind of consider it kind of a waste to try to go into something new - entirely new - although this experience would be valuable if I would go into finance or marketing, which I might yet. But I didn't want to specialize until I know more about those other alternatives.

The authors frequently observed the need for information to be a reason for postponing decisions.

> I did know what engineering is pretty well and I wanted some general training in business so that I could investigate these other alternatives...Now I started thinking about a Ph.D. at this time too. Perhaps not too seriously. But I thought that if I would get a general training in business I would work for a while. This is kind of a long-range plan. I would work for a while and decide which area I might be particularly interested in and where my abilities would best fit. And then perhaps specialize with a Ph.D. at some time later on. But I didn't feel that I knew enough about my own abilities or interests at this time to go and specialize in accounting or finance. I think I know more now than I did then; I'm sure I do, having had this experience last year at school.

Interview 1

I Now I was just going to ask you a little bit about your future plans. As they stand now you are narrowing down your fields of interest and you think that you'll probably work for a few years and then possibly go for a Ph.D. or possibly go right on into management.

S I shan't go for a Ph.D. right now. I find that I must go to work now and make a little money. I'm just going to be in debt when I get out of school.

* * *

So right now I'm at the point where I'm going to get the Master's degree in industrial administration next June. The thoughts going through my mind at the present time and have been for the past several months are concerning line and staff. This is my big decision. I have to make it now. I've set next December as my goal to make this decision, as to whether I want to go into staff or line. I worked...this summer in a manufacturing organization to get experience in a factory so I could examine line and staff. I had the opportunity to go to work with a staff job which would have been kind of restricting to me. I don't think I would have been able to get out into the plant to see what line management does, but now I feel that I know. So I think that right now I'm kind of tending toward line, primarily probably because of my naval experience which was line experience. I enjoyed it and I can see quite a lot of similarity between that and what I saw in line management in a company this summer.

* * *

I guess I'm getting old enough where I have to make them too but I feel that I'm able to do it now, I know enough about career opportunities now to be able to discern between one and the other. I'm at the position with education where I have the background that will allow me to make the decision between one and the other. I was kind of drifting along before. I don't think that I would really have changed it, looking back. I'm glad that I was in the service. I gained a great deal from all these experiences. I don't think that I would really change it if I had control over them but I don't really think that I had control over those situations before. I just kind of...

Interview 1

> I went to State because the high school principal recommended it and I got a scholarship. I joined the Navy program because - well, I got a card from the college saying that you had to take ROTC. You could either be in the Army or Air Force and you can take tests to get into the Navy. And I thought, well, if you have to take tests for it, it should be a better deal. So I took tests and I got in. I didn't know what ROTC was. I didn't know what an officer was until I got in the Navy, until I got my commission. But I know some of these things now and through these experiences I feel now that I'm pretty much in command of the situation where I wasn't before. I should probably mention that I did consider a career in the Navy and I should probably tell you why I decided I didn't want that.
>
> I told you that I was quite satisfied with the ship board experience, and after I became a qualified officer of the deck and department head and for the last several months aboard ship I was senior watch officer; I was third man in charge of the ship. And I guess this carried a certain amount of prestige with it. The Navy life is the high life.
>
> You don't make a lot of money but there are a lot of fringe benefits - I like this travel, it's glamorous. I really enjoyed the prestige of being able to bring a ship in. This is the most exhilerating thing I've ever experienced, I think, bringing a ship alongside, having command of the vessel. Those are natural forces But I decided - I had been accepted at Carnegie Tech at the time I made this decision. This was a definite decision that I made - a choice between a naval career and a career in industry. And I just kind of examined myself and I examined the people around me in the service and I just decided that I didn't have some of the qualities necessary in a naval officer to really go way up, to become an admiral, which I would have wanted to do had I decided to make a career.

This is a major decision-making technique. An alternative is rejected by estimating that the long-run payoff is not likely to meet one's standards for satisfaction.

And I just, maybe subconsciously, I didn't want to give up the engineering training that I had, although a lot of that would have appliance in the Navy. But I did make this choice and I'm happy with the choice that I made now. I'm confident in the future and I'm confident in my abilities to go ahead and make the decision on a career and get along okay.

I Thank you very much, George, and I guess we're getting near the end of the tape so let's conclude it here unless you have anything more you want to add. Fine. Okay. That's it. Thank you very much.

Interview Two

Consideration of Ph.D.

INTERVIEWER Well, George, the main thing we're interested in is sort of pegging you at this point in time. So, the first thing I'd be interested in is just what's on your mind these days?

SUBJECT Well, this is probably going to be - kind of throw everything off of your study that you've done thus far, but I've kind of reversed field, about - well, maybe not 180°, maybe about 150°. I thought last fall at the time of the last interview, I was pretty well decided or set on where I was going and what I was going to do but I find that I've been doing lots of thinking over the last month, about the future and what it holds and what I want. And so, well, I guess maybe I should start with a re-evaluation of the summer's working experience and what I consider to be important for the future for me. Well, before I start with that I should make one more statement. It seems that right now, at this point in time, my thoughts on the future are prompted more from a negative approach than from a positive approach. I'm thinking in terms of the future not in terms of what I really want to do because I don't know, particularly. But I'm thinking of the future in terms of knowing what I don't want to do. That's the distinction. So. I find in thinking about the future - career goals - that I'm not really convinced in evaluating business as such and going into industry that this is what I want. I've been kind of ... in my own mind and in talking to other people, using this term materialistic yardstick of success that is so popularly used in industry. I'm not really convinced that this is what I want - this is going to be completely satisfying for me. I saw people last summer, and in the

This is the selection by elimination approach mentioned earlier.

Reasons why Ph.D. is attractive.

military I saw the same thing to some extent in a different form - people very - quite satisfied with relatively high incomes from the norm; from $12- to 15,000 with a house in the suburbs and maybe a swimming pool in the backyard and golf course down the street and bridge games on Saturday night and so forth. And these people are living in this little sphere of interest and this looks kind of good I guess.

But as yet, really, limited in that something is missing in this for me. I don't know exactly what this is and maybe if I get into industry and get involved in this type of life, this is what I would want. I don't know. Right now I'm just at the point where I don't want to risk getting wrapped up in this type of environment for the rest of my life and running the risk of falling into this...I consider it to be a rut. So, I've been trying to think of how I could avoid this or if, in fact, I want to avoid it. And I had - well about a month and a half ago I had pretty well reached a decision that I thought would solve things pretty well. I started thinking about more school; this had been in the back of my mind for some time. But I kind of suppressed it because I thought it was out of reach. I started thinking about going on for a Ph.D. several weeks ago, about a month and a half ago I guess. There's a constraint on my activities from the financial viewpoint; I'm going to be about $2,000 in debt when I get out of school and I don't like the idea of getting deeper in debt. And so, I had just decided that the thing for me to do would be to go to work some place where I could work in industry and view the business world from several viewpoints and then decide what I might really be interested in going on for a Ph.D. in as well as pay off my debts and achieve some minimal degree of working capital. Well, this is fine; this is what I had pretty well concluded until about 2 weeks - well I guess I should say that this was my thought process in arriving at this conclusion. I didn't know exactly what I wanted to do Ph.D. work in and I thought it was kind of folly to go on to a Ph.D. not knowing what you wanted to study, really, or if, in fact, you really wanted to go on for a Ph.D. other than just from an element of self satisfaction. And so I thought the thing to do would be to combine these two goals in a job if possible - of viewing the business world from a broad vantage point and making as much money as possible in the interim period. So I kind of narrowed my choice down to consulting work or overseas operations. I thought that in consulting work, if I could get a job

Another instance of the umbrella approach.

with a relatively high degree of mobility, with diversification of tasks in a short period of time this would give me the best chance to look at several aspects of industry and make up my mind what area of industry or business administration I would really be interested in going into. It also is a relatively high paying position and I think, having had the service out of the way, that I could run a pretty good chance of getting employment by a consulting firm.

The other alternative, the overseas operation, I thought would also be very enlightening; perhaps not quite so enlightening from the American business point of view, because you'd have some specialized tasks abroad, but the pay is as good as you can get anywhere for virtually all companies and there is this added feature of being abroad which would broaden oneself. So I had pretty well decided these were the two things that I would look for in employment this year. Well I was kind of talking to my financial - my finance professor - kind of over a cup of coffee one day. I was mentioning these things; I told him that I had just recently started thinking about going on for a Ph.D.; asked him whether he thought it was feasible. I should go back here and explain why I had perhaps never thought about this before. I think I went into in the last interview, something about my background and home life, early environment, etc. And this environment, I think, produced an attitude of awe toward a Ph.D. I guess maybe when I was a child, a kid in Illinois I mean I had never really had any contact with advanced study at all. I looked at going to college with some deal of awe. And I looked at graduate work in general, Master's degree work even, as something pretty much out of the question. And a Ph.D. was just without comprehension. I just didn't - I knew nothing about it; I just thought this was completely out of reach. And I guess, for some reason or other, this attitude has prevailed and stayed with me until this time. But I had never thought of - I think I may have pointed this fact out - going for a Master's degree - well, I started thinking about a Master's degree work when I was, about the last two months of my senior year at State. And I didn't think about college and undergraduate work until the last part of my senior year in high school and I guess it's following the same trend but the more I go on and these horizons are opening up and I can see these possibilities. And so, for this reason, the Ph.D. didn't enter my mind until now. Well, getting back to this discussion with the professor. I mentioned these things to him

A dormant idea is given impetus by new information.

and he said, "well, if you're going to go on for a Ph.D. you should go on now and get it out of the way. Once you get out and start working, it's very difficult to come back for a Ph.D." So this made sense to me. So I talked to another person on the faculty at school,...and I just was kind of feeling him out as far as working with a consulting firm, the feasibility of this - and I kind of mentioned these thoughts about going on for a Ph.D. to see what he thought. He indicated also that if you're going to go on you should go on now. He was somewhat skeptical as to the value of a Ph.D. in business, in the business world itself. You have enough, as much with a Master's as you really would have with a Ph.D. - in the business world. That's in 1960. And so we discussed what it might be in 1980 and...And he also brought up the fact - well we discussed age - and if I'd go on for another 2 or 3 year program for a Ph.D. now this would make me almost 30 years old. And most people start working in their chosen professions by this time. This didn't bother me too much I guess because I'm pretty free and independent and I just want to do what I want to do, pretty well. So - And then I talked to tho assistant doan, about this. Just to see whether this was - I had done all this thinking from, with the preconceived notion that I had the mental capacity for a Ph.D. And so I went in just to check up on this pretty important point, I guess, with him and see what reaction he had to my thoughts about a Ph.D. because I'd never mentioned it to him before. He seemed to sympathize with it; he didn't indicate that it was out of the question at all. Looking at performance at the school and at grades on tests, etc. it seemed to indicate that I probably would be - I wouldn't be a real high Ph.D. candidate as far as the entrance exam etc. and other criterion of measurement are concerned, but there shouldn't be a difficult time in getting through a Ph.D. program. I hadn't considered the one at GSIA because I'm not as mathematically interested nor inclined nor do I have the background of most of the Ph.D. candidates here. Although I can - I would value a Ph.D. from this school, I just don't think... I mean I would have to work too hard to get it and my interests just don't lie there. So I was thinking in terms of some other business school - Stanford or the University of Chicago, specifically. So anyway, I had some encouragement from the assistant dean. I went to the Dean; spent an hour talking to the Dean about it. I was quite surprised that he also didn't discourage me at all. He indicated that I could probably get into any business school that I wanted; I don't know; this is what he indicated. And he said to consider various schools - Harvard, Stanford, Northwestern, Indiana, Columbia, perhaps the University of California at Berkeley. But we talked about these things and brought up the subject of education. So he talked of - we're getting back to careers now. But we talked at length about going into education with the thought in mind that most Ph.D.'s in business lead toward the teaching profession more than industry unless you go into research - pretty basic research and I'm not interested in basic research. I am certain enough of my own talents and abilities to know that I'm an administrator and not a research man. So. I thought about this - about teaching. And I told the Dean, you know, I had thought that this might be where I could find this extra quality that I was looking for. I don't really know; I can't say with conviction that I want to be a teacher, having just thought about it for the last month or so. But if I could convince myself, either rationally or irrationally, that this is what I really wanted to do, I might - I'm sure that I could find some measure of satisfaction from teaching that I couldn't find out in industry. The profit motive isn't quite as distinct in the teaching profession, I don't think, as it is in industry. Well, a couple other side comments about this. I guess I can't really say that I want to do without the materialistic rewards of business. Not entirely. But these in themselves are not enough. And so I kind of thought that if I could choose the right field of study for a Ph.D. I would be able to have the advantage of the college environment, the college atmosphere, the certain amount of eased restriction on activities that - in one form - on the college campus that you don't have in industry. And if I chose my field correctly, I could probably do consulting work on the side - for industry, thereby supplementing the salary of the university. So, these are the things that I'm thinking about now. Let's see, I wanted to say one more. I wanted to talk about teaching. Maybe a psychologist will get something from this. This occurred to me a couple of weeks ago - a couple of days ago, rather. When I was a senior in high school - this one course, I don't even remember what the name of it was - this teacher brought around all those pamphlets and we were supposed to decide what we wanted to be. Whether we wanted to be a mechanic or a schoolteacher, or what we wanted to do. And so all these professions came around - accountant, engineering and I didn't know what these things meant. Fine. And I thought, well now college professor wouldn't be too bad. This thought occurred to me in highschool. And then, as I said, I just kind of suppressed all thought of going on for graduate work which would be necessary because I thought that it would be out of reach. I never thought about it since then until this time. I don't know.

Another side point. I've taken, on a couple of occasions, a series of interest and aptitude tests at State. They had a rather extensive testing service there. And if you'd like to see these - I have a copy of them if you'd like to look at them. I still have them at home. As I recall, I was kind of high in the social sciences. In social interest on those tests. But I just didn't consider this too much because I was wrapped up in engineering at the time. And I guess I decided that I was limited; I was directed and there was no point in even trying to consider other directions.

But, getting back to teaching again. When I went into the Service, right after I graduated from State, I had orders to Pensacola gunnery school and I was quite pleased because maybe I was still thinking about teaching and at this time maybe I was. But I was quite pleased because I thought that this would give me a chance to really get in front of people and see what it would be like to be a teacher. But this was a kind of a discouraging experience and I think I just - I've been thinking about this for the last several days too - I think that maybe this might have been what completely put teaching out of my mind. I just never considered it any more because this is what happened...

* * *

At this point the *S* discussed at length his success as a teacher.

...But I found myself really getting into a rut doing the same thing time after time after time. Looking back, I can see that maybe this is the reason why I was kind of soured on teaching. And looking back, objectively now, I can see that this probably really wasn't a representative sample of what teaching could or is like. Now do you want me to keep on or...

I Yes, yes.

Interview 2

S This is just rambling, I don't know.

* * *

The S then related more about his service experience and his family background.

> Illinois had a school of Industrial Relations at Champaign. So I got their catalogue. Well the first year I was in the Navy, just kind of thinking in terms of the future. And so I evaluated these a little bit not really knowing what I wanted to do or why. I thought about this during all the three years while I was in Service and this - the choice of the school I guess was the first major decision that I really made, having - well, still kind of drifting but I kind of made a decision...Whether to stay in the service or to go on to school. And for a couple of reasons I decided that I didn't want to stay in the Service. I was tempted because the life is high. The pay is pretty good; well, the pay isn't really too high but the benefits are pretty good. It's a romantic life and lots of prestige involved and so forth in being a Naval officer. But I kind of had a couple of strikes against me by being a product of an NROTC program. I thought that captain would be all that I would hope to achieve in the Service, in the Navy. The odds of making an admiral are really small for anybody, but not having gone to Annapolis, they were really greater. This is one reason. And the other reason is I guess - it's kind of the same thing that I'm wrestling with now. There was some element lacking in the job; some feeling of satisfaction that I couldn't get out of just doing the job. I don't know - I haven't identified this now but something was lacking. It wasn't a question of something being there that I wanted, it was a question of something not being there that I wanted.

The foregoing is a fairly graphic description of what might be referred to as "the accounting approach" wherein the S weighs the rewards and costs of an alternative, or the assets and liabilities, or the advantages and disadvantages. As pointed out in Chapter 3, however, the authors believe that relatively few decisions are actually made in this way. In fact, it is questionable whether this was the decision-making strategy used in this example. The S does not say that he computed a net advantage or disadvantage or in some other way summarized his evaluations, nor does he mention comparing any summary evaluation with his summary evaluation of any other alternative. For these reasons, the authors believe that this is best regarded as the "choice by elimination" strategy. Alternatives are eliminated because they fail to satisfy an indispensible requirement, in this particular case the requirement that the S's growth potential be unlimited (i.e., that he be able to become an admiral). If the S does not have any indispensible requirements by means of which he can eliminate alternatives, then he can invent requirements.

S

So, I decided to come on back to school. I applied to the University of Chicago and Carnegie Tech. The University of Chicago primarily because of the name; Carnegie Tech primarily because of the catalogue. The program said it was designed for engineers and offered a general course in business. The reason I went back to graduate school instead of going to work and going to night school is that I just realised that I don't or didn't have - I guess I still don't have a real high degree of self discipline and I wasn't really convinced that I would go on to night school and accomplish what I could accomplish in a couple of years of concentrated study. And I felt that if I were going to be a success in business then I was going to have to have some additional training in the business field because I didn't have any as an undergraduate, really. So I wanted some more training and I wasn't, I didn't have any marital commitments or anything like this. So I wasn't tied down so I decided I would come back even though I would have to maybe borrow money to get through. So. I came here. This was kind of drifting - it was kind of a directed drifting. Cause I didn't really know what the curriculum was and I didn't have any way of really finding out what it was. Cause for that matter, I didn't really know what the curriculums were in any other schools. But I felt that, well the fact that they only accepted 30 members, 30 members of a class each year appealed to me. I thought

Note the absence of any very adequate information gathering. This was frequently observed.

Career thought creates dilemmas.

this was a pretty highly selective process and if I could get accepted there this would be the place to come to. It must be worth something. And I found out that this is probably - if I were to pick out *one* decision - this is probably the one real good one that I made because I'm convinced that I couldn't get a better education anywhere in the country than I am getting here at a Master's level. I'm pretty well convinced of that. So this kind of brings my decision making up to the present. So right now I guess I feel that I've had enough experience in the outside world and I've had enough academic training to really know what alternatives are available to me and to realize that there are alternatives. And the more I think about it, the more alternatives I can see. Which is something of a dilemma. Well, what direction would you like to have me go now?

I Well, there was one question that I wanted to ask. Have you discussed this recent thinking with your friends at all?

The Ph.D. as a hedge.

S Um hm. I'm quite sure that none of my friends ever considered me as Ph.D. material. Probably because I never talked about it or never even thought about it before. And frankly, there are quite a few fellows in the class that - well, that are evaluating what they want to do and quite a few of the fellows in the class are toying with the idea of Ph.D. I'm pretty sure that there probably won't be more than two or three that go on for Ph.D.'s from our class. Too many of them want to make money, as I do. Or are married and have other commitments that won't allow them to go on. Or just don't feel that they have the mental capacity to go on. Most people, most of the friends I've talked with haven't expressed shock at my mentioning the Ph.D. Something of wonderment but I get the impression that they don't - this is what they're driving at - I get the impression that they don't really feel I'm capable of going on for Ph.D. work. I guess my status in the class is above average. And this really doesn't make much difference to me because I'm pretty well convinced in my own mind that if I become convinced that I want to go on for Ph.D. work, I won't have any trouble doing it. I might mention one more reason why it's so appealing. I wish there was some way I could really structure this conversation. I just kind of ramble. But well, there are several reasons why I can see that going on for a Ph.D. now would be a good hedge, if nothing more than a hedge.

Interview 2

What the S refers to as "hedging" is closely related to the umbrella approach and the uncommitting approach. Here the S adopts an alternative which is a safe investment of his time and resources, regardless of what he may do subsequently. It may merely be a way of postponing decision but not necessarily; it can be a permanent career choice. A career in medicine is an example; if the S can qualify and is willing to invest the required time and funds, he is reasonably certain of a secure future. We shall refer to it as the "play safe" strategy since it is not exactly analogous to hedging in the usual sense of the word. It is conceivable, however, that an S might hedge in precisely the way that a grain broker hedges, although the authors have not observed it.

S The marginal return on this added lost salary and invested money and time might not be as great for a Ph.D. as it was for a Master's degree. I mean, in other words, that I might get more return for my Master's degree work proportionately than I will from the additional work required for a Ph.D. But, there are other benefits besides just the financial rewards. I can see first of all, I'm - I don't have any marriage plans at all and I guess I'm not really that interested in marriage right now. I'm interested more in finding out what I want than in marriage. And so I'm kind of - I'm pretty free here - I'm pretty free from the family. The only major constraint I have is - are - finances. So I can see going on for a Ph.D. as a good hedge from several viewpoints. 1) If I choose the correct thing it will give me a chance - well, I think that I will be able to get a Ph.D. in business in a kind of general field. I'm pretty sure I will be. This is what I'm going to investigate; I'm going to write for materials from the universities. I can get a Ph.D. in some sort of a general field and get a specific field at the same time. I mean general from my point of view but specific from the outside world's point of view. This would let me buy some more time for thinking about what I want to do for a lifetime for a career. This is an advantage. I'm convinced that if I decide -

this also gives a chance of examining teaching, the teaching profession, and seeing whether or not this is what I really would be interested in doing. I think I could be a good teacher if I were convinced that I really wanted to be. I'm also convinced - well regardless if I would go into the teaching profession or into industry - a Ph.D. would be a distinct asset and not a liability. If you get a Ph.D. from South Dakota State in liberal arts, if there is such a thing, most people don't look at where you got it or what it's from, as long as you have a Ph.D. behind your name, on a college campus. I mean this means more than if you'd have a Master's degree from Harvard Business School or from CIT or from MIT. So if you go into administration I consider a Ph.D. a must - into teaching, a Ph.D. is a must. If I would decide that I wanted to go into industry I would probably go into consulting work with a Ph.D. and I guess I'd feel pretty well convinced that in the future a Ph.D. is going to be pretty important. Master's degree right now is getting to be like a Bachelor's was 10 or 15 years ago. A Master's degree is a pretty common thing now. And I think that a Ph.D. would be a pretty valuable asset in business later on. And then there is this element of self satisfaction, of just being able to say that I have a Ph.D. And I guess this is the major reason that I'm kind of interested in it right now, and this isn't enough; I want to be convinced of some of these other goals - the feasibility of these other goals instead of just the satisfaction viewpoint of having a Ph.D.

And there's another factor that has entered into my thinking recently. And this is just that by going on to school I guess I look at it as a possibility of really investigating - or knowing what maybe my true potential might be. I haven't reached the point yet where I can say well, this is all the further I can go. And the more I go to school, the more I do, the more I see that I'm capable of doing. And I just kind of...I can see by going to work say for Company Y and working myself up through this chain I can see what I can do within this sphere of influence, but the base is pretty narrow. And so this kind of appeals to me. Just for the satisfaction of knowing what my limitations might be or if there are any limitations.

Interview Three

Consideration of Industrial Position

INTERVIEWER Well, George, the main thing we're interested in is what you're thinking about these days.

SUBJECT I don't remember exactly where I left off last time. I don't know if it makes any difference or not.

I It's not important. I sort of prefer to have each interview independent.

S Well, I don't think it could really be independent from what I said last time. I guess my thoughts have been pretty much along the lines of what I reiterated last time - about career goals. I've been trying to isolate my desires a little bit further than I had previously. And trying to evaluate my capabilities and interests a little bit more than I had before. I guess last time I was talking about thinking about going on to school and I was trying to decide whether this would be feasible or whether I would really be interested in it. Whether this'd be the thing to do or not. I was pretty well wrapped up in school last time. During this last month I've talked to a number of various individuals at school about - I guess about opportunities more than about myself. I think that when I was in before I had mentioned I had talked to the Dean about the possibilities of going on, didn't I? Well, to start with, maybe I should just outline where I intend to search for career opportunities next year. It's December now and I've pretty well set up this as a goal. I've decided that by December I wanted to know pretty well what I wanted to do - at least where I was going. I don't like to drift along without really knowing what I'm doing. So I decided pretty well that I'm going to investigate opportunities in industry as well as investigate opportunities in universities for two reasons. One is that I'm not really convinced that I know what I want to do and the second reason is that if I decide that I *do* want to go on to school I might find it financially impossible to go on. So I want to kind of cover myself by knowing where I want to go in industry and where it is possible for me to go in industry, should I have to go there. So I'm going to investigate consulting work with several of the large consulting firms. I have talked to a professor who is on the faculty at GSIA.. And I'm going to talk to another consulting firm that's going to be on campus tomorrow. I'm just going to talk to them and see what opportunities they might have; see how I might fit in there. This is one alternative. Another alternative in industry is the overseas division of some large corporation or the central operations research department of some large corporation. I feel that this is where I can get the largest scope of activity which would be interesting to me. I would probably have the largest amount of visibility as far as being able to be seen by other people within the corporation. I've excluded line management from - pretty well - from my thoughts and desires because I feel this would be too constricting on me in work. The problems might be pretty big at the particular level which I might be at but this scope of the problems involved wouldn't be large enough to really keep, hold my interest for a long period of time. As well as the visibility would be low. I mean that's a little gamesmanship, I suppose, but I figure that if I can find a position where I can be seen by people higher up that it is to my advantage to be there.

The overseas opportunity.

This may have been an effort to eliminate an alternative by establishing high requirements.

I have also written several schools... I've received literature from three of these schools now. I intend to evaluate the programs and probably apply to all seven universities with the thought in mind that the more applications I make for financial aid the better my chances are of getting something pretty good. I've kind of decided that if I can't get at least $2500 plus tuition, I probably won't go on. I don't really know what the odds are; my mind might change if I become firmly convinced that I really want to go on for a Ph.D. but now I've kind of arbitrarily set this figure because I think I could probably get by on $2500 a year. Satisfactorily. I wouldn't have to borrow more money and I don't want to borrow more money to go on to school.

So these are the areas that I'm investigating at the present time. I've...I might mention that I talked to a partner in a consulting firm and I was kind of skeptical about whether I had the ability to go into consulting work; whether I was the type of person that could. And well, this man kind of informally indicated that if I should decide that I wanted to go into consulting work I could probably get a job with his firm. So, he apparently thinks that I'm capable of doing the work and would be desirable to have on his staff which is significant, I guess, to me. I'm still investigating the overseas operations of corporations because, well, as I mentioned in one of the other interviews, I'm interested in working abroad. I think it would be very interesting and very challenging; possibly more so than working in the States. Then this might be an alternate choice of employment. Just because - I mean - this desirable quality of working abroad, of having a larger range of responsibility and things to do that I couldn't get in the Stateside operation. I guess I don't really look at a job as being - well, as being just one job to do. You have to form a kind of a hierarchy of occupations and careers and if one is perhaps unattainable, why you have to choose an alternative choice and decide why this is more desirable than something else. Kind of rambling now; this just came to mind. Well, I would appreciate a question now - for direction.

* * *

(A long series of comments about dating and his school work followed.)

I How about reading, George? Is there anything that you've read that you remember particularly?

S Well, I've been doing a little extra-curricular reading. Perhaps more than I should have, considering the amount of work I've been doing for my classwork. I think that I mentioned in one of the other interviews that I talked to a professor about thinking about going on for a Ph.D. and wanted to find out what he felt was important in his job. This was about six weeks ago, I guess. At this time he said that I should read some other books; a little extra-curricular reading that might help me make up my mind... I told him I was a little dissatisfied with industry and I wasn't really sure why. But he said you ought to become a little more dissatisfied and then you can come back to the place where you can accept some position. So on his recommendation I read *The Great Gatsby* by F. Scott Fitzgerald which was kind of enlightening and gave some indication of what the outside world might be like. One author that I've been kind of reading on my own has been Albert Camus. I've kind of enjoyed - I read *The Fall* this last autumn...

* * *

Interview 3

I — Well I'm going to stretch your memory. I think you can see that, as the last time, what I'm trying to do is just peg you at this point in time and identify any significant inputs. Do you think we've covered it?

S — I think so. I'm sorry I haven't got more to offer you this time. I haven't any violent changes or ... I guess this last month is just served to kind of solidify my previous thoughts. That I'm just branching out, searching for information now on which to base future actions. I feel quite a bit better about the future now than I did say even a month ago in that I guess I have made this decision pretty well - about searching for job opportunities. I feel pretty confident that I'll be able to have a job offered to me in one of these areas that I've mentioned and I think I probably will have a number of jobs offered to me in these areas. So, as far as security is concerned, I feel pretty secure. I've been well, encouraged with what the faculty has said about the possibility of going on for a Ph.D. and this kind of helps my security problem there too. I guess I don't have any security problem really. But I feel now that all I have to do is gather up some of this information and make the decision among the alternatives, next spring. At some point in time next spring; I don't know exactly when it will be.

Self-characterization.

* * *

Interview *Four*

A Tentative Decision

(The interview started with a discussion of the results of a battery of tests which the S̲ had taken in college.)

* * *

SUBJECT — I went in to take some interest and aptitude tests because I had just started thinking about going on to graduate work. And I kind of was primarily interested in seeing whether or not they thought I had the mental capacity to go on. And at the same time they gave me these interests - or interests tests - to see whether or not... well, what my interests were and so on. I guess they haven't really changed appreciably since that time.

Interview 4

INTERVIEWER Yeah, this is very interesting. You seem to be high in business administration, public service, engineering.

S Which is this last one?

I That's sociology. Then low in biology...

* * *

S I was an advisor in the dorm for a couple of years - my junior and senior year. And had been kind of working with sociologists - people that had - were - well, the fellow that was in charge of the program in the dorm was working on his - toward his - Ph.D. in sociology. And so there was quite a bit of sociology involved in his program back there. It was kind of a... one of the better organized dorms in the country, I think. And so my interests were there and I realized that my training was in engineering and so at this time I was thinking about what could I do to pull the two together. I don't think I really - at that time I think that I kind of looked down upon business administration students, frankly speaking. This is probably because a lot of the people that started out in engineering at State transferred over to industrial administration or industrial management, you know.

* * *

I And. Well. What are you thinking about these days?

S Oh, these days? Exams, mostly. I haven't thought about too much except classwork for the last several weeks. Been working pretty hard. I guess I have a pretty high feeling of satisfaction right now. I had all my papers in on time by last Friday and I think most of them are pretty good. I kind of - I have two finals left to take. I think that I've - I have an opportunity to get a pretty high grade point this semester. As I perceive my opportunities. I'm kind of looking forward to seeing how it comes out. So I've just been kind of working pretty hard. As far as careers are concerned, I guess maybe - when was I in here before, was it at Christmas time?

I Yes, it was just before.

S Just before Christmas? Okay. I'll bring you up to date on what I've done.

3

I Good.

S At that time I think I had just written inquiries to several schools - graduate schools, looking for information about Ph.D. programs and I talked about the possibilities of going on for a Ph.D. and at the time I wasn't really too sure why I wanted to or whether I really wanted to or not. Well actually I have, since that last interview, applied...(two different graduate programs, which the S described in detail.)

* * *

I've pretty well decided that I really want to go on to school. I would like to go on and get a Ph.D. My finances are such that I don't want to borrow additional funds and I don't want to - The major constraint as to whether I go on to school is financial and if I get accepted to one of the fellowship programs I've decided I definitely will go on to school and I will go on to...(one of the graduate schools) primarily because this ranks about as high in the minds of the faculty at GSIA as any school in the country except GSIA as far as I can determine. Now as far as why I do want to go on, I decided that really probably the most significant motivating force is just the desire for another year of academic book-learning in classrooms. This is why I mentioned this before; it's probably a little confusing. But I kind of feel that over the last year - couple of years - well, over the time in service and particularly over this last year and this last semester, a lot of things have been jelling for me. A lot of things that I've studied before have been kind of falling into place and a foundation is kind of being built now or it's almost there now, I think. And I find that I really believe that one more year of academic training could really be a significant learning experience because I think I have enough foundation now, I can really build on it and get some of the real good parts out of classwork that I haven't dug - I've let slip by in the past. And so this is why I'm - I really want to go on just for - The primary benefit is this one year of training.

This impressed the authors as being a rationalization for remaining in the relative security of the academic setting.

Now in being accepted for a Ph.D. program you're kind of assuming a certain responsibility toward the school, I feel, and really pursuing the Ph.D. actively rather than just going to school and taking it and I guess I couldn't really enter into one of these fellowship programs with the expressed purpose of just going on for one more year of training and then getting out because, I mean, this is not what the funds were set up for. And I guess I would feel that this would be kind of, well, quitting, as well. I just kind of don't like to do that. So - I've decided it'd probably take two and half, maybe three years more to get a Ph.D. someplace.

* * *

This is another year and a half beyond this classwork that I talked of before. And I just - well - if I get one of these fellowships now, I'm pretty sure, pretty confident, of my ability to retain it for another additional year. And this would provide me with enough money to get by relatively comfortably, I think, during this period of time. And I could go ahead and pursue and get a Ph.D. I'm quite confident of my ability to do it.

Arguments in favor of getting a Ph.D.

The reason for wanting one is probably twofold again. One is that I'm still kind of - these tests indicate that even back then I was kind of interested in well, public service, sociology, things like that which is kind of dealing with the teaching area, I think, probably. And I've talked at length at some of the - couple of the other interviews about my thoughts along these lines. I'm still not really sure of whether or not I really do want to go into teaching or not. But I'm certainly leaving this alternative open and I'm - well, this is reason number one of why a Ph.D. would be valuable to me.

This is a particularly interesting argument since the S's indecision is used as the basis for decision-making. Jenkins decided to do Ph.D. work because he had not definitely decided what he wanted to do and, therefore, had to leave all doors open. This is an example of the self-defeating inefficiency of indecision.

And, reason number two is that I'm pretty firmly convinced that in the future - in the next 20 or 30 years - with the large numbers of Master's degrees being given out in business schools all over the country right now, that a Ph.D. - if I would go into industry or business - that a Ph.D. would be a pretty valuable asset on the job. I mean whether the actual, in addition to the discipline and the research techniques that you might - that you learn in pursuing a Ph.D. - I think that just the mere possession of the degree will open some doors that wouldn't be opened if you just didn't have it. This is projecting into the future...

* * *

So this is just kind of a pretty good hedge toward the - for the future all the way around. If I can, if I can go. So, now if; this is all a big if. If I don't get one of these fellowships I'm, I guess psychologically and emotionally prepared to go to work, in industry and I'm going to seek work with either, well, in large corporations probably in their operations research departments for a couple of reasons. A chance to learn the organization. A pretty good-- most of these operations research groups have pretty good visibility so you get known in the company too, to start with. And from there I think this is a pretty good vantage point to see where in the organization you want to branch off, if you want to branch off - if _I_ would want to branch off at all. Or, what I think probably I will do, if I can find a prominent consulting firm that will take me on their payroll, I probably will go into consulting work either in the financial area or in the operations research areas. I just think that the diversification of problems and tasks in a consulting firm would maintain my interest probably longer - better - length I guess isn't too important - better than working in industry, so...

(The _S_ then described the high caliber of the faculty as the reason for selecting a particular graduate school, and added:)

And finally, a purely personal reason which may be influencing my decision more than I realize, is that I have a friend that lives about five miles from the campus, I was in the service with this fellow...He'd just bought a house back in the mountains near the campus and so I got this letter at Christmas saying that he's saving a room for me. Apparently he has this big house back there, about five miles from...

the campus. And he drives through the campus every day to and from work. And this'd just be a real good set-up for studying and well, just living for a couple of years. Because I had an apartment with him for about six months and I probably got along with him as well as I have gotten along with anybody. I mean we seem to just work pretty well together, cooking and just mechanics of just living together. And we enjoy similar things, as far as entertainment is concerned and social activities and so I think it'd just be a real pleasant way of life out there.

* * *

Let's see I could tell you about this session I had with a professor Saturday. That's kind of interesting.

I Yes, I would be interested in that.

S I have been wanting to talk to him for the last - for several weeks... I have him for this course - Ideas and Social Change - this year, this semester. I think I might have mentioned this course before in the interviews. But it's been a - the course itself has been kind of a revelation and we discuss the arts, and we discuss ideas of man and ideas of God through history. We became exposed to books that I never really knew existed before and points of view that I never really existed before. It's been a really kind of an interesting and revealing course. But all through this time I've been kind of impressed by the man himself. Because I mean here is a business man that's been a very successful businessman and the knowledge that he has of the arts and "culture" in general is really fantastic - as I perceive it. So last fall, when I was first thinking about going on to graduate school, I just kind of - My value system was a little bit fouled up last fall as you probably will recall. I really didn't know whether I would be satisfied with materialism, materialistic rewards of industry or not. Really, I didn't know what I wanted to do and things like this. So I went in and talked to him then for a while, trying to decide how he reconciled some of these things. And he kind of told me that he wasn't really completely satisfied with the American way of life as it is, you know, with the materialistic emphasis that exists. But he had kind of reached the point of view where he just kind of - do with it what you can, you know.

And he has succeeded in doing this very well. Anyway, we talked about some of these things for about an hour last fall and he said that if I had anything else to just come in or just drop in and see him and tell him how I was coming along. So last Saturday I went in and talked with him. Told him essentially what I just told you about what I'd decided I was going to do.

* * *

I — Would you venture any guesses as to any parts of what he said which may particularly influence your own thinking or your own...

The balance of this interview is given in detail since, as will be seen in Interview 5, the association which is described played a highly significant role in the S's decision-making.

S — You mean throughout the course?

I — No, this - in the future; your own, your personal future.

S — You mean anything that he said during this interview or that he said during the course?

I — Well, both.

S — Yeah, well, just contact with the man I think has probably influenced me. Kind of a - probably the most significant influence would be just looking at somebody that well, can accomplish what I can see this man has accomplished. To me he's achieved a measure of success in business - quite a high measure of success, relatively high measure of material wealth; he's completely accepted by the community, respected in the community. Now these are all personal pleasure, I guess. That whether people want to admit that they have them or not, they desire these things. Well, I think. And most of all, I think that he, through his interest in reading and the arts and appreciation for the arts and the symphony - well, all of the arts. I think that he's really developed a full measure of living and has found a way to - a key to appreciating life in general... And this has kind of served as a kind of an inspiration, I think, and I probably will be influenced throughout the rest of my life in trying to achieve some of the same things that he has achieved. In some way or the other. Primarily along the lines of developing an appreciation for Art, and - for the fine arts, and reading...

I Well, we've been talking quite a long while. Does this summarize things pretty well, do you think?

S I think so, as far as they are now.

I How would you sort of peg yourself at this point in time?

Self-characterization.

S I guess probably I could say that I'm considerably more satisfied and confident in the future than I was last fall or at any time in the past. I think that this final decision of getting this graduate school - I mean the Ph.D. and working and all these things kind of set. I know where I'm going now. At least a decision has been made on these things, and the alternatives are kind of outlined and I've reached the point now where I'm willing to accept either of the alternatives that present themselves. And so this is a good feeling for me.

I I'll bet it is.

S And I think possibly...I'm coming around to the point now where I'm going to be able to- if I don't go on for a Ph.D. - I'll be able to go to work in industry and be reasonably happy and content with it. With what I find in industry. I don't think I'll be able to find some of the things of value to me in industry.

I Tell me again just quickly, before we break up. His comments on working in industry and how he reconciled the kind of opposing values here.

S Well, I don't know whether I have these things completely straight in my mind. It's kind of an impression, I guess, rather than a series of facts...

* * *

Personal values and the environment.

This is probably the most significant thing. I guess what I got from talking to him is that each individual can kind of, well, develop his own standards and his own system of values. And he can really probably adhere to them regardless of what environment he finds. And so what's important now is for me to decide on what values I want to live by, where I want to place emphasis. If it's in the cocktail parties, fine; this is where I want to place my emphasis and I'll get along okay. If I'm not really completely satisfied with the bridge parties and cocktail parties and barbecues, there probably will be other outlets for me to exercise my system of values. And this is, I guess what I really didn't think that I can do last fall, I think I can - I think that I can do that now.

* * *

Interview Five

Rejection by Graduate School

INTERVIEWER Well, what's on your mind these days?

SUBJECT Well, I have a bomb shell today. I don't know if you've done any analysis so far but this is probably going to throw it all off. I got a letter from...(the graduate school to which he had applied) last week saying they didn't accept me for their Ph.D. program. This was about last Tuesday or Wednesday, I guess it was. So I've - the last couple days - been kind of wondering whether it was a rationalization or whether it was sincere, but it doesn't really bother me too much having been turned down. I guess - the reason that was offered was that I had - my score on this admission test for graduate study in business was below what they had normally expected, as were my grades thus far. And so apparently this is just - they have, in their selection process, a cut-off point below which they just don't consider applicants any further than just looking at their score. So I can always feel that they're making a mistake in my case. I would be capable of doing the work in all these things because - well, I took this test after three years of military service being almost entirely divorced from an academic environment during this time. And I just feel well, I could have done better if I would - well, if I take the test right now I know I can do lots better than I did then. And I got a 3.6 out of a 4.0 basis last semester, which I don't really think is too poor academic work. They didn't have this transcript when they were considering my grades though. But, what's kind of surprising to me, or interesting, is that I - it doesn't really bother me too much other than just the fact that I would have liked to have made the choice as to whether or not to go on to school myself, rather than have someone make it for me. But I guess the last several weeks I have been coming around to the point of view where I almost feel that I'm ready to go to work. And, well, although I really would have liked to have gone on for another year, as I said last time, another year of academic training, another year of classwork, just to gain more information and to learn some more things, and I think that I probably would be interested in this behavioral science thing, to go on for a Ph.D. in this area, I can't say that I'm really totally convinced that this is what I want. And for some of the reasons that I mentioned last time about all this dissatisfaction with industry that I came back to school with last fall,

Reaction to rejection of graduate school application.

to a great or lesser degree, I guess - well, maybe industry wouldn't be as bad as I thought it was going to be last fall. I don't know; I don't know why it is.

I You say you don't know why this is.

S I mean I don't really know why I've changed my mind completely. Then there's - I guess maybe just for the reasons I discussed last time... talking to... (two professors) and some of these other people and kind of perhaps being more confident of my ability to retain individuality in an industrial environment, that I really didn't possess last summer. So - anyway - my dilemma that I was in last time has been resolved. And so now I'm really actively searching - I will commence an active search now for job opportunities. With - realizing that I am going to go to work. Actually, I guess I find this - as a reaction to this - that my mind is a little bit eased, in that I can forsee an opportunity to pay off this debt that I have and I guess maybe start accumulating some material goods, that I don't have at the present time. I don't know why this is an important factor unless it's - it goes back to my family where my mother has always been a very thrifty person and whether or not I realize it or not, this is kind of influenced this activity - or these thoughts rather. Of not - I just don't like to be in debt. I don't like to carry on a lot of over the years. So - well - what specific area would you like me to go into now?

I As I remember, you had written to some other schools.

S I had written for information. I did not make any applications at other schools, because my criterion was going to be financial assistance. The criterion to use in deciding whether or not to go on. And this...fellowship had a $5,000 stipend and this Ford Foundation fellowship for which I am still being considered pays a $2500 a year stipend plus tuition. Well, this might still come through and well, I don't know - I guess I'm not as confident now that this would come through as I was before. But it, in fact, it would come through, and I would get this Ford fellowship, I'm quite certain that I could write ... and ask them to reconsider. They would probably let me go. But, I don't think that I'll do this. I mean, I'm - I guess I've just - well, the main reason for this is this $250 a month is a subsistence level of income but it's nothing more than subsistence level.

The authors regard this as post-hoc dissonance reduction.

I guess I'm looking at the money. Now this is kind of interesting; I can't really tell you why I'm switching from one area to the other area unless maybe I might kind of talked myself into the viewpoint or to the attitude that I really did want to go on for a Ph.D. when maybe I really didn't feel as strongly - Apparently I didn't feel as strongly as I might have thought that I felt because it's really kind of - it's not difficult at all. It's kind of - to give this up, at the time being, and go to work. I haven't completely excluded additional graduate work from my mind. I mean I'm not taking this entry into industry as being the final course of action. I do intend to continue on with night school - and I guess that I - I guess maybe I'm most interested in kind of resolving my financial position and then going on from there. There's another experience that probably affects this acceptance of my refusal from... and which prompts a certain amount of desire to go ahead and go to work. And this is an interview trip that I took betweeh semesters to an aircraft company. I told you that I was going there. This other fellow and I went out... between semesters and talked to them for a day, and an evening. Well, I shan't go into details as to what exactly we discussed or what the details of the job offers were, but the overall result was that they seemed to be quite pleased with us and I felt that they were quite interested in me as a potential employee. And the job itself - the jobs themselves, that we talked about - quite interesting looking jobs. They were special positions that they had created for Master's degree holders. Assistants-to...The specific job that I was interested in most and, well, they called me up last Friday and asked me which one I was definitely interested in and then they said they would write me and make me a formal offer, all the details in a letter, which I haven't received yet. I expect to receive it either the end of this week or next week. But this was the job of assistant-to or staff assistant to a man in middle management having about 500 employees under him. Two levels below vice president in the... This is in the financial area. And so the guy himself looked like a - a person who would allow an assistant - me - to really exercise lots of authority or initiative and kind of show within the - well, the jobs are created for you to go into and work in for a year and then from there you would go on into some other area you wanted to go into specifically and give - get a chance to show what you can do. This is some indication of how fast you might be able to move in the organization. And they would also spend

The aircraft opportunity.

this time evaluating you to see whether or not their impression was correct. What to do with you. So all in all it looked like a real interesting and kind of a good opp - a position that would provide good opportunities for advancement. And I guess what I was most impressed with was the fact that they really treated us very nicely. And they seemed very interested in our capabilities and were - well, the future looked pretty bright there and it looked - and I guess what I'm driving at in all this thing is that - well, we're in pretty good demand, right now. And it looks like we should be able to find some pretty interesting jobs to go to work in. Really get out and do something; that I know I could do.

I — When did you hear from...(the graduate school which rejected his application)? Was it before or after the trip?

S — After the trip. I have an interview next week. I'm going down to Company Y. You know I worked with them last summer. And they have scheduled interviews with their production people in the plants for two hours. Three hours of interviews with the people in their Systems Analysis section which is operations research type of work and three hours with their overseas division...

* * *

I — This plant trip; how did that come about?

S — Yeah, well I had received offers in the mail and also while I was there last summer, from these two plant managers that I worked for last summer. And I've been receiving correspondence from them all the time, all year. And in the letters last fall they just said we'd like to have you go down again next winter and spring and talk some more in detail about specific opportunities for permanent employment. And so I wrote them. I guess about a month ago, when I asked the training manager to submit a recommendation to,..(the graduate school) for me. And in this letter I outlined the areas that I was looking - that I was going to examine for permanent employment. I was going to examine - I told them - either operations research work for large corporations or consulting work. And I told them in this letter that I still was interested in talking to their people from their overseas division some more. Just - kind of a preliminary approach to finding out more about this

Interview 5

Interest in overseas work.

because I don't know enough about overseas operations or overseas work to say, yes, I'm definitely interested in doing this particular job. This would call for my living abroad for a period of maybe 10 or 15 years and I don't know enough about it to really say definitely what I want to do.

I

Well, George, what other - in your mind's eye what other alternatives do you see as far as industry is concerned?

S

Well, I've been having some preliminary discussion with representatives from...a firm in Pittsburgh. Well, they have an office in Pittsburgh. And I find that I think I might really be interested in this, in this area. I think I mentioned at a couple of the other interviews - I found my work last summer really quite interesting. Working on different projects. Different types of projects in different areas of the plant. And I'm a little bit hesitant to kind of tie myself down to one company or to one type of operation all the time. And this feeling kind of still pervades my thoughts.

This hesitancy to tie oneself down was typical of Ss who experienced high decision-making difficulty.

From what I have learned of this profession,...this area is growing. It seems that you would have the opportunity to get around, to travel some, to work with different companies on different types of jobs. Well, throughout the year. And, you wouldn't really - or I wouldn't really feel that I were only tied down to one specific area of work - one type of product I'm identifying myself with all the time. In essence, I guess I would be; I'd be tying myself down to this type of work. Not a specific product but this general type of work. But I think this would be more interesting than something else. Now, I don't know, I find that I can really get kind of enthusiastic about lots of these jobs. I get enthusiastic about this job offer. I mean this position available...(with the aircraft firm) which would have been in one specific area in a given company. I think that I could probably get pretty wrapped up and interested in this job. I think that I can probably get quite interested in this work and do a good job and probably progress. These aren't the types of - well, this isn't the type of job of going to work in a factory, say in the time study department or in engineering drafting or even for that matter, in the accounting offices of a company. And kind of going, going through the routines of a particular, specific job of oh, day after day after day, you know. The same type of a specialized task day after day after day. All of these jobs that I find, and I am convinced that I will continue to find, that are becoming available to me are really interesting type of jobs for me. They have diversification of tasks; high level of mobility. And they look like really good starting points for going on up in a company. And I guess maybe that I - a major consideration that I have is an opportunity for advancement, for some reason. Whether this is a desire for control over people or whether it's a - this is probably more important than the increase - the salary increase as I progress in a company. Or just a desire for an increased feeling of importance within a firm. I don't know what it is. But if I go - when I go to work in industry I guess I'm going to be pretty ambitious and go with the thought in mind of becoming a vice president or something like this in the firm. Or a partner in a consulting firm. And actually I really don't know how I'm going to resolve these differences of where I go to work, what specific job I take. Because, well, I guess you might even - might look at these types of jobs that I'm interested in which are rela- - I think are going to be relatively numerous, being in one group over on this one hand and all these other specific types of jobs on the other hand. Working with accounts receivable or accounts payable exclusively in an accounting department or working at a drafting board or working in a plant layout department. These are the things I've had experience with. Or for that matter, even working in a production job as foreman or department manager in one of the plants..., for which I have offers now. Those are - these two types of jobs are to be contrasted I think. And I'm interested in this one area over here on the right hand side with the diversification of tasks and the high level of mobility, seeming - well, opportunity to advance. Whereas over here I kind of get the feeling of being stuck in a rut. And this is what I really don't want. That's just a kind of side thought. The jobs over here on the left hand side are the ones that I was looking at last summer, in the plant. And this kind of might be what really prompted a desire to go on to school, to get away from this type of work. And it just might be that these interviews at...(the aircraft company) and the development of a general attitude

The characteristics of a desirable position.

that more interesting and challenging tasks may become available to me. This general realization might be what's making me feel like I want to go to work in industry now, whereas I didn't so much last fall. This - that's kind of fuzzy. I'm finding that I've said always before that whether the specific job I take is going to depend on the job itself and on the opportunities therein and the geographical location isn't going to be so important. But I'm finding more and more in my thoughts recently that the geographical location is going to play a more important factor than the job that I definitely choose. With the final job I choose. Not the general area now - we've kind of sorted out a general area of types of positions but now choosing one or the other of these - well - you might call it kind of equal types of jobs. Any job I could get interested in and go to work on. Well the selection of one of these is going to depend more and more, I think, on the location of it. And I'm really kind of surprised to find that this has been affecting my thinking about...(Company Y). Because I didn't particularly care for its location last summer and I know that if I stay with the company, go with the company and plan to stay with them, and become utterly successful as I hope to be, I would probably spend at least the last 15 or 20 years of my career with...(that location).

Importance of geographical location.

Notice the exact wording here. The suggestion is that at some level of awareness he had already decided on Company Y.

And this doesn't really appeal to me. That's kind of surprising.

I You say these thoughts about location in your mind; I wonder what...Can you enlarge on that at all? I think I know what you mean.

S Well, for some reason - I could probably point out different reasons - I just didn't like...(the location). Their - well, I don't particularly care for their climate down there and I don't know wh...I find that I kind of enjoyed being near large bodies of water. Maybe this was because I was in the service and I liked the sea. I guess thinking in the future at some time I would kind of like - I like sailing and I would kind of like to go sailing and it's just a big project to go sailing there. And some of these, what I might call really minor points about a place are becoming more important to me than I - than they have in the past. And so, I've been just kind of thinking about these and comparing...(that location) and what it has to offer along these lines with such places as (the West Coast), which I really kind of liked, which may be what's making ...(the aircraft company) attractive to me in addition to the job itself. San Francisco, which has - well - it's a beautiful city I think, and it has lots of water close and it has mountains close by and it's a very nice area. I've been through San Francisco a number of times and I've liked it while I was there. So, well, I've kind of diverged again. I was talking with...(the consulting firm) about the opportunity of working in their San Francisco office, specifically. And if there's an opportunity, I might be able to do that. These are the considerations that I'm thinking about now.

I

As I said, I'm not questioning any of these alternatives, it's more your logic - I'm just interested in your thought processes here.

S

These are probably becoming more important to me now. Maybe because I've isolated this other - the jobs themselves. And I've reached the point where I kind of look at any of these jobs as being equally desirable. In this group of jobs on the right hand I was speaking of before. And so once you've isolated a number of jobs in these areas that look like they would be equally desirable, equally challenging, interesting, and well, relatively comparable as far as advancement and pay is concerned, I guess then I'll just start looking about other factors to use or criteria to use in choosing between these different jobs. And these locations are coming in. And I'm quite sure that another factor along these lines will be availability of night schools...

Strategy for choosing among jobs.

So, we're back to the same haphazard type of choice, I guess. The same dilemma that I was in a long time ago. Only I feel much more comfortable about it now.

* * *

I

Well, we've been at this for quite a long while. So maybe we can cut it off. How would you characterize yourself in a nut shell at this point?

S

Self-characterization.

Well, that I'm an individualist reasonably well qualified to go to work in industry. I've had enough experience and academic training to do well in industry and to be able to discern what's important and what not important in industry. And I guess that I would say that I've achieved a mental attitude of being ready to go to work with perhaps too high a level of confidence in my ability to succeed. I don't know, this is...

Interview Six

The Peak in Indecision

INTERVIEWER Well, what are you thinking?

SUBJECT ...Well, time is getting a little shorter I guess. I haven't anything to say this morning. In our last interview things were definitely on my mind to say. I'm still kind of caught up in this quantity of indecision and perhaps I'm more decided than I was last fall. I think I'm less confused than I was last fall.

Review of alternatives.

Yes, I'm more undecided... I guess I feel I know better now what the various alternatives are available to me than I did last fall. I know more what is involved with the various types of jobs but I'm still not really certain - of exactly where I want to go or what I want to be. I might just kind of outline the sort of jobs again under our concern. There is a searching end. I haven't done an awfully lot of interviewing actually this semester. I've only interviewed about maybe half a dozen companies. I haven't talked to these big Pittsburgh companies... I've been kind of limiting my discussions to public accounting or accounting firms in this area...I guess I figured one corporation is just about as good or bad as another. I have offers from...(the aircraft company) and from... (Company Y). Over the holidays I'm going down to... to talk to...(Company Y) people some more. Ah - I also went to the ... accounting firm...

...I think right now as far as my hierarchy of my interests are concerned I'm interested in going into consulting work, public accounting, auditing and, eventually, moving into the management services area with a public accounting firm...or the operations research area of some large corporation. And then a secondary consideration of all these things, the possibility of going abroad, going overseas with some company. I guess that I've almost concluded that if I have a reasonably good offer money-wise from...(the accounting firm) and if I like...(the location) I'll probably work there...at least start there, start in this line. This is - I still - I think - I just have this feeling of being constricted in operations and movement with a large corporation. I think I could get away from this best in a public accounting firm as well as providing excellent opportunities for education and exposure to the various types of management. ...um, this is about all I have to say about jobs - you're going to have to be a little more direct this morning.

I You said you had five or six interviews, I think.

S Yeah. I talked, well let's see - these are the companies I talked with...(The S listed six companies.)

I Can you... free-associate on why you interviewed with these particular companies?

S Yeah, well...from the professors I've talked with and from what I've learned about this public accounting profession - I really didn't know much about this before last year or several months ago, from what I've learned any of these big eight, perhaps you saw it, maybe you don't read Fortune magazine, I always thought psychologists read Fortune...

I As a matter of fact I do, but...

S Oh. Last October or November there was an article in Fortune about auditors and there are eight major public accounting firms...Since the operations of these are pretty much the same, I guess I've kind of gone for...(the accounting firm mentioned previously) because they appear to me as being the most progressive of the public accounting firms.

* * *

I talked to...(a bank) in New York because well, one of the professors said I should talk with them. They came onto the campus and I signed up for one of their interviews and I'm kind of interested in the financial area and ah, well, a fellow asked me...well, to talk with him. So I talked with him...I have some reservations about this one: I anticipate if I got an offer, the salary would be pretty low and two would be: I, I, well, the competition with these Eastern schools which have graduates moving...into the financial area probably would be pretty keen...

I hadn't intended to talk to...(an oil company) which is an operations research group...because they have the reputation of being a rather high powered group; they have a number of doctorate holders there and really, they are very, very progressive along the lines of operations research and I'm not the highest powered mathematician in my class nor, for that matter, anywhere, and I thought I'd kind of be in a one-down position going with them, so I didn't interview them originally. Then their interviewer apparently got the names of some people from school and he called me up and asked me to come in and talk to him. So, I went and talked to him last week and I told him precisely why I hadn't planned to interview with them...

...(an automobile manufacturer) had representatives here from their corporate controller's office which is a staff of about 300 men and they talked with groups at coffee hour at GSIA and...the things they were doing there in the financial area I was interested in specifically and continued very interesting type of work and challenging enough for me to hold my interest and so I...now the plant interview trip is for ...(a divisional) controller's office so I'm not really sure what I'm going to be talking to them about. But it was interesting enough and the company looked like a progressive enough company to make it worth my while to investigate it. I'm still going down to talk to...(Company Y) to talk to their overseas division again and see what type of opportunities might exist.

I The academic business is not in your mind's eye now?

S Not right now, no. I guess I've kind of put this aside at least for a few years - and see what happens when I go to work. If dissatisfaction arises on the job perhaps I can still go back...

I still haven't heard on this application for Ford Foundation fellowships but I doubt very much if that will come through.

I Has anybody heard yet?

S No. They were supposed to be out the first of April.

I Well, what other things have been on your mind?

* * *

Interview 6

S

My mind's kind of a blank this morning as far as I've been a little disturbed about my motivation at school - my motivation is kind of dropping. I can't get - I'm not really fired up over the classwork assignments. I guess I'm coming toward the end of a long ride and you're looking for something new or something different and it's kind of difficult to maintain your interest in what you're doing. This is rather disturbing because I was looking forward to getting a great deal out of this semester at school. It seems like I'm doing a lot of busy work but I'm not getting as much out of these courses as I should be; I'm not putting the studying time in that I should.

* * *

I

How about reading, George, any reading that has impressed you particularly?

S

Other than magazines and newspapers about the only extra-curricular things I've read, is - I read *Sons and Lovers* last week - when I had the flu last week, while I was recuperating which I read. I enjoyed quite a lot which was really different from the movie I read - or had seen rather. I read...I don't know which of these, or not the... and *Death of a Salesman* you're probably familiar with this. It's really surprising that they're almost identical type of - well, not identical exactly but similar type of compassions and problems involved...

(He then described in detail the plot of *Death of a Salesman*.)

S

Well anyway,...I followed them? ...What is important and what should be important and I've kind of come to the conclusion, I don't know how realistic this is, the tragedy in life really doesn't come from being... caught up in the cocktail circle, or whether it's in the family circle, the gothic circle or whatever it is. Tragedy doesn't really lie in these areas for these people. I think the tragedy really is when people are caught up in these things and want to get out but can't, if you follow me...

People have to have something to occupy their time with and occupy their thoughts with and if it's with families and babies I guess it's O.K., and if it's the cocktail circle with the executive's wife or the bridge circle with the executive's wife, this is O.K., but if it's somebody caught up in a routine like clerking in a drugstore and they want to be an executive's wife or something like that and there isn't reach for this and they can't make it just because they don't have the ability and background, and this is really a struggle for them because they want to get out of their environment and they can't this is what's really tragic, I think...

* * *

I Well, how would you characterize their momentary state?

Criteria for job selection.

S I hope to make a decision by - the last part of April as to a job. As far as career is concerned, I think I'll probably look at this job as - well, I kind of wanted to get a job where I could expect to work for the rest of my life and develop a career in a specific company or a specific endeavor. I think I've reached the conclusion that this might not be considered practical and so I'm probably going to take the job that provides the most jobs for me and the most stimulus for continued education and growth and these things. At the present time without trying to map things out completely in the future or for the future. Um...as I said previously if I get a pretty good money offer from...(the accounting firm) I will probably go to work for them. Long-range career goals are still a little bit nebulous yet.

I Well, why don't we end it on that thought and then we can pursue it next time.

Interview Seven

A Choice Is Made

INTERVIEWER What's on your mind?

SUBJECT Well jobs; I accepted a job.

I You did?

S Yeah. I don't know if I had gone on this interview trip the last time I was in here or not. This was about three weeks ago I took a final interview trip. Talked to...(Company Y) and...(the automobile manufacturer). And I received offers from all of them, and I have accepted the offer from the overseas division of...(Company Y). It was a kind of a difficult decision to make but I think it's the right one.

Interview 7

I Can you review the whole thing?

S Can I review all the jobs that I thought..?

I Well the kind of processes you went through in making your decision.

S Perhaps I should outline the jobs themselves, first.

I Yes.

S I received four offers from (Company Y). Various segments of the company. And a couple of other offers. I narrowed the choice down to three specific jobs which were quite divergent in types. One was...(Company Y) overseas division which I'll delve into later. The second was a job with...(the aircraft company) I might have talked about this before. This is an "assistant to" position where I would be assistant to a manager of the program financial control section of their aero space division. This man has 500 people working for him and it looks like it would be a good power position within the company. Some control, which is good. The man himself would be a good man to work for. Lots of visibility...I'm sure that they would give plenty of opportunity for responsibility fast and keep their eye on you and if you could produce well they would reward you for it both financially and with higher positions in the finance department. And I liked...(the location), which is a very desirable place to live. So this was a very desirable position. I probably would have taken it if I hadn't received this offer from...(Company Y).

The aircraft company offer.

The accounting firm offer.

The third alternative was with the accounting firm... This is another separate area for a different type of job. Probably more flexible than the other two. I would work on their audit staff for a while and eventually go into their management services function doing consulting work. Greater or lesser degrees of level of technical activity. The money was competitive for all three jobs. So I wasn't considering money as much as I was long-range goals.

Now this...(Company Y) job would provide for me to train in the United States for two to four years. The program is their management program. I would be one of two or three people to go into the program this year. And this is all they hire. The overseas division has a policy of having all the overseas operations staffed and, as much as possible, managed by foreign nationals... (I would be in) what they call group manager level where I might be in charge of all the industrial engineering for the plant or in charge of all production scheduling for the plant; the next hierarchy below plant manager. Might be in charge of all their accounting and things for the plant. This is a group manager level. And then of course a plant manager is in charge of the whole operation, finally. And I would train the the States until I achieved the group manager level and then be sent to a six-week cram course...to study the language and culture of the country that I would be going to. Then I would go abroad and be one of a small number of Americans serving in these plants; probably no more than four or five Americans... Expect to spend from three to five years in each plant location and then move to another plant or another country. Could possibly expect - feel reasonably confident that I would always progress in respect to eventually be taking part in a task force - go into new countries where plants are not in operation and help set up a plant.

Reasons for choice.

Now the reason I chose this one over the others - as you can see, these are all three very different types of jobs. But I think that they're all very good jobs for what they are. I'm constricting myself now and entering a specific field - essentially my opportunity for professional growth or, you know, learning things as I've been learning here at graduate school, will be less in the job with...(Company Y) than with the other two. I would have most flexibility with the public accounting firm in that I'd be dealing with different types of problems and trying to develop mathematical models to simulate these various problems that exist in industry and would move around lots of different companies, lots of different managements...However, the reason I chose the...(Company Y) job was several fold I guess. One, the foreign subsidiary operations are so small and the numbers of Americans abroad are so few in this company that the opportunity to work in the marketing and finance areas as well as the production area would present itself more rapidly I feel with ...(them) than with one of these other areas where I would be specialized along specific lines. I think I would reach positions of responsibility faster; at least the opportunities would present themselves faster with...(Company Y), than with the other two alternatives. And this is kind of important to me. But possibly the most important thing is that this job provides something a little bit special or something extra. It's not an ordinary run of the mill

Chance to contribute.

job. And I don't know where this desire comes from. Why this is important to me. But it is. I found when I was talking to the people in...(Company Y) from the overseas division that they got very enthusiastic over the type of work that they described. The opportunity to go in and work with foreign nationals to feel that you were contributing to the sanitation improvement - the health improvement standards of the countries, is a certain amount of reward from the job that I couldn't get from working in the U.S. The contact with foreign nationals I think probably as rewarding or more rewarding to me than working with American people. I have had some contact with foreign nationals both through living in the graduate house here and from in the service. People who worked for me on the ship were from the Phillipines and from Guam. I had a couple of guys who worked for me from these countries. And I had some contact with them while the ship was in the Orient. And I liked them very much and a job to some of the peoples in these other countries, I think, would be more meaningful to them than a comparable job in the United States. Maybe it's - I don't know, I really tend to be a little bit concerned about this attitude that I've found evolving over the last year or so. A kind of disappointment with the trend toward materialism in the United States and the complete orientation of practically all the American public toward more automobiles and nicer clothes and more baseball games and, you know. But for these reasons I chose this job and I'm...

There are some risks involved, I guess, in going abroad. I have no family attachments right now. Should some of these evolve there might be some conflicts occur. I think that I could choose the family attachments- specifically wife - so as to minimize potential conflicts. I'm a little uncertain about America's status abroad in the future; it doesn't seem to be too good these days. And so the risks of going abroad may be greater in the future than they have been in the past. But all things considered, I think that this is going to be the most challanging and interesting job that I could get. So that's why I took it.

I — How do you feel about it now that you've - have you made a definite commitment?

S — Yes, I wrote last weekend. I wrote to all the companies that I had contact with and told them all what my decision was. There's a certain amount - some misgivings. Little doubts. But these would be present regardless of what you chose. But I'm quite satisfied, I think that...

Interview 7

I How do your friends feel about your decision?

S Most of them think it's a good thing. I think a lot of the married people are - say - well, this looks really interesting, you know. Maybe when you get married you won't want to go abroad and these things. They're a little bit concerned about this. And I think some of them are maybe a little bit envious of this type of position because it has a certain aura of romance about it that isn't present in a day to day job in one location in the States. I haven't really paid an awfully lot of attention to what their reaction has been, other than kind of passing, you know. This decision was kind of more internally generated than from external pressures of, you know...

Attitude of friends.

I How about your professors - people on the faculty at GSIA?

S They think it - they think this is a pretty good decision - they kind of - I talked at some length with a couple of the professors before I made a definite decision. I just kind of wanted to review my reasoning to see whether there was something that I left out and specific - well, two people I went to just before I made the commitment - after my decision had pretty well been made - were...(two professors) who have had quite a bit of experience with business and industry and they asked me some kind of questions as to had I thought of this and had I thought of that, and I had. And they seemed to indicate that my reasoning was sound and my motives were good and so - it turned out not to be any real problem. I mean, I kind of went to them as having a problem but they said I really didn't have one. Which is kind of what I wanted to get a confirmation of.

* * *

I Do you have any regrets about not doing advanced academic work?

S No. I talked to...(a professor) a little bit about this because I talked to him last spring or last winter when I was considering Ph.D. work and he said he thought that maybe these - well, things I've kind of called aesthetic rewards, or whatever you want to call them - from employment, that I've been seeking, could be achieved through the overseas operation. And I kind of think in retrospect - I don't

The investigators believe this to be a valid self-perception.

know how much of this is sour grapes or what. But in retrospect, I kind of think that my interest in more graduate work, in Ph.D. work, was an attempt to isolate something, to find some sort of reward that I didn't think that I could find in a job. Rather than being channeled in a specific direction and knowing just where I wanted to go, it was another area that I would like to investigate to see if I could find what I was looking for there, you know. Well, I kind of got this same feeling when I was talking to these people from the overseas division. That is the challange of working abroad and feeling that you were doing something significant rather than just making money...

* * *

More post-decision dissonance reduction.

This is rewarding, I think. So I really felt that I could find some of these rewards from this type of work that I really don't think that I might have been able to find in teaching, although this was kind of where I was going to look. In specializing in something - I mean this is all retrospect, you know - I'd be kind of limiting myself to one area of study - a thesis work. And this again is not - I don't know really whether I could find this satisfaction from just doing pure research and finding - so I'd find out some specific facts, some best way of doing something or some truth about some small segment of knowledge. This isn't really - I don't know whether this would really be significant to me after I found this after all. I guess maybe I shouldn't be saying this, talking to a research psychologist, but these are the reactions that I kind of had. This might be rationalization, I don't know, but there's a certain element of truth in this it appears.

* * *

I — In looking back over this last year what do you think have been the major influences on your thinking?

Major influences in retrospect.

S — This course I took by...(a professor) I think has opened up lots of big areas of just reading and interest in reading things and knowing facts. Has been one major influence. I think that another influence has been reading this book by Eric Fromm called The Art of Loving. I don't know whether I mentioned this to you before or not. Are you familiar with the book?

I No, I'm not.

S It's kind of a philosophy book. You're familiar with Fromm?

I Yes, I know Fromm. I thought I had read everything that he wrote...

S This is kind of a condensation of both his other books. He kind of talks about his value systems..what you should try to do..where your life should be oriented toward. And he talks about various forms of love - love of fellow man, love of self, erotic love, these things and where their place is - fits into the overall thing. I can't sit down right now and specify the certain parts of this book that I'm thinking about specifically but some of his approaches to things - his apparent dissatisfaction with materialism. The sham of some of the materialistic orientations of people have made me do quite a good deal of thinking. I suppose - I think that it's probably made me do quite a bit of thinking. I guess these are probably the major influences I can think of.

* * *

I If you had to make a wild guess, where do you think you'll be five years from now?

S I can't say specifically. I would expect to be at or near the plant manager level in some foreign subsidiary. Probably not quite the plant manager level.

I To what extent did the distant future influence you - your career decision, mainly?

* * *

S Very little I would say. The long term - this value function that I mentioned before - aesthetic rewards or whatever you want to call these things was the most important thing, I think, in my decision. If I were looking for - well, I thought about these things but they weren't - maybe they were of negative importance rather than of positive importance. If I wanted to fall into - not fall into - conform to what I perceive is the American pattern of living a good life, of having sufficient income, pleasant surroundings, a wife and family and kids that grow up and go to school and go to college and all these things, I would probably be best off...(with the aircraft company) because the initial salary was good, very nice surroundings, good prospect for advancement within the firm with associated salary increases. It would be "the good life". But the value wasn't there. What I - I don't think that I would have been satisfied with these things. I may have been, I don't know. Probably I'll never know. But the difference between this and the long run rewards from the overseas job made me choose the overseas job. Now there are materialistic rewards with this overseas job too. The starting salary there is higher than any of the other alternatives that I had. There is a bonus - an overseas bonus - that ranges from 15% to 30% of your base salary for living abroad. Cost of living - in case of overseas cost of living is higher than America's, you get another bonus for this. And most generally the cost of living is considerably lower and so you could live on a relatively higher plane abroad than you would in the States. So these things are present. But these didn't really enter my decision as much as the type of work.

Materialistic rewards in overseas work.

* * *

I Incidentally, a while ago you used the term "aesthetic values". Do you think you really meant aesthetic?

S I used this term in lieu of a better one.

I Altruistic, maybe? Aesthetic I associate with beautiful.

S Yeah, I guess maybe this is - I was using - well, the term aesthetic in just - I wouldn't say altruistic, no. I'm looking for self-satisfaction. Now whether this comes through helping other people or not, I don't know.

I Okay, but...

S Mental rewards might be a better word. Emotional rewards, or something like this.

I Okay, I guess what you really mean is non-material.

S Yes, I guess maybe so.

* * *

Interview 7

I Well, George, this is the last interview. Looking back over and just thinking back over today's interview and previous ones, is there anything we ought to add or anything you want to qualify or anything?

S Can't think of anything...

I How would you characterize your momentary state?

S You mean - I don't understand this - that's too non-directive. I mean I don't know what state you're talking about - marital state, job state, mental state, or -

I I guess mental state is what I had in mind.

Final self-characterization.

S Well, I've got a job that I think will be very challenging and interesting and I'm kind of looking forward to going to work there. I think that I would have looked forward to a lesser degree to going to work for one of these other jobs that I outlined... I guess the first interview I indicated that I'd kind of drifted along up until the choice to go to graduate school here. I guess the first real decision I made - where I recognized alternatives and made a positive decision - was when I decided to stay in the service the year and go to sea. This was the first major decision. The next major decision was the decision to go on to graduate school rather than to stay in the service or to get out and go to work. I'm very pleased with these decisions and I think that right now I'm in a position economically and information-wise to be able to pretty well control alternatives from now on out for the rest of my life, whereas I doubt very much that I would have been in a position to, had I not come back to graduate school. These jobs wouldn't have been available to me if I would have gotten out of the service and taken a job directly. They are - they're available to me now. I think that I have the equipment at this point in time relative to everybody that I'm going to be competing with to be able to make the most of the opportunities that present themselves and pretty much pick and choose where I want to go and what I want to do from now on.

I Let me ask you a question that occurred to me a while ago. If you had got the fellowship from...(the graduate school) what do you think you would have done?

S

I would have taken the fellowship and I would have gone to...(graduate school). At least for the first year... As I indicated the search for something - for rewards. I have some doubts as to whether I would have found what I was looking for there. I don't really know what I would have done. It's hypothetical. Once I started working for the Ph.D. I probably would have made every attempt to finish the work for it. This was a pretty major decision. Actually, I'm quite glad that I was rejected. And the fact that I didn't really actively pursue doctoral programs in other schools indicates I guess, at least on the surface, that I wasn't that interested in getting the Ph.D. for the Ph.D.'s sake.

I

I think I know why you say you applied but didn't go through with it but can you tell me?

S

Retrospection.

Well, in retrospect, thinking about what I might have been doing as a result of going on with a Ph.D. program I'm kind of doubtful that I would have found these rewards - non-material rewards. I would have found certain non-material rewards in the teaching profession. But I don't think that they would have been really satisfying to me. They wouldn't be global enough I think... I really don't know what prompts this kind of a desire to do something different. This might be part of why I like the overseas job so much is that it's something a little bit special that not everybody else does. This goes back to high school when I was a skinny little kid with acne and kind of rejected by the group. Well, I wasn't rejected; I was kind of tolerated but I wasn't the center of attraction or really felt that I was "somebody" in high school. Whether these are all desires to compensate for that or not, I don't know. But it's there...

Discussion

In discussing the course of Jenkins' decision-making a number of terms will be used, most of which were introduced in Chapter 3. These terms and brief definitions are:

input. The information from the environment or the memory of the individual which - in the language of Chapter 3 - may or may not raise dissonance above tolerable levels depending on how inconsistent it is with the individual's premises.

premise. An attribute, cognition or affective statement the individual verbalizes about himself or about his general weltanschauung.

strategies. Statements made by the subject about how he plans to make decisions.

constraints. Environmental forces or states (e.g., a military draft, or a school's graduation requirements) which impose limits on the individual's freedom of action or choice. In one sense, these are a special type of premise, but they differ in that they are not subject to individual interpretation.

The word decision is used in its usual sense, although it sometimes refers to a decision to postpone one's decision or merely not to make a decision at the time. On several occasions "dissonance-reducing premises" are pointed out in order to highlight thoughts which enabled the Ss to make needed decisions.

Recapitulation of Interviews

In the first interview the S stated his intention not to go for a Ph.D.; the alternatives between which he felt he had to choose were "line" and "staff" careers in an industrial setting. There seemed to be little doubt in his mind that he would take a business position immediately after receiving his Master's degree in Industrial Administration nine months later. A large portion of the interview was devoted by the S to recounting his previous career decisions, and thoughts as and before he made them.

In the second interview, the S showed a great deal of dissatisfaction with the prospects of a business career, and introduced the alternative of going on immediately for a Ph.D. in business, followed by a more academic career, or one in consulting work. He presented this as a "180° turn" in his thinking.

In the third and fourth interviews, the S spent most of the time discussing the perceived advantages and disadvantages of an academic versus an industrial career for himself. Tests which were administered before and after the interviews showed fluctuations in values and attitudes, and the index of indecision based (see Chapter 5) on the interview showed it to be high during this period.

The S's application for graduate study and financial aid was rejected just before the fifth interview. This was the only application that he actually made, although he spoke of making others. This occurrence was a turning point apparently, since in the fifth interview the subject stated his intention to get a job, even though in the fourth interview he had stated, "I have about decided that I want to go on for a Ph.D."

Again, in the sixth interview, the S had definitely decided on going to work in industry, and was actively engaged in interviewing companies for a position. His alternatives were at the level of specific job offers which he received.

By the time the seventh interview came, the S had made a decision to work for a large corporation in their overseas division, after "narrowing the choice down to three". He had informed the firm of his decision and was looking forward to starting to work.

The Major Premises

The first premise to be discussed is a financial one. It was stated repeatedly throughout the first five interviews (i.e., during the period in which the S was unsure about whether to continue graduate work and go on to an academic career, or go into industry with its more immediate and sizeable monetary rewards.) Typically, the S would express this premise by saying "I don't like to get deeper into debt." Related premises are: "Materialistic rewards are not enough," which appeared only in the second interview, and "Materialism is part of me too," which was stated in the third interview. All refer to the financial side of the S's conflict between the two broad alternatives. No such premises were stated after the fifth interview when the S resolved his conflict by accepting his failure to get into the first choice graduate program.

Several premises concerned the possibility of the academic alternative In the second and fourth interviews only, the S stated that "I have the ability to get a Ph.D." In the third interview he stated that "I would fit into either an academic or an industrial role." Such premises were stated only in these three interviews. The S mentioned four times in interview two and once in interview four that a Ph.D. was the solution to the problems which faced him. Other attributes, mentioned only in the fourth interview, included: "A Ph.D. in business usually goes into research or teaching", "Teaching has something that industry doesn't." The conflict present is pointed up by the following two premises, both from the second interview: "I'm an administrator, not a research man", and, "I was a bit soured on teaching while in the service." Obviously, teaching and research did not match up very well with the S's ideas of himself. It was necessary, so to speak, that something be bent.

This "bending" process could be seen in Interview four when the S stated the premise, "As my values and interests evolve I will find some good in industry." In the fifth interview (after the rejection of his application) S stated twice that "I'm ready and willing to go to work." In the last interview he could say "I think I made the right decision." The attributes of industry became more positive as well, as shown by the following comparison. In Interviews two and four, the S predicted that "Business may not be completely satisfying," but in Interviews four and five, he also stated that "Maybe industry isn't as bad as I thought," a remarkable admission for someone enrolled in an educational program leading to a career in industry.

It would seem that two important periods existed in the series of seven interviews, as revealed by the analysis of the protocols. The first of these was the introduction in Interview two of the idea of going on for a Ph.D. Second was the rejection of the S by the graduate school chosen, which occurred between Interviews four and five. This threw him back onto the industrial job market - or, said differently, it allowed him to put himself back on that market. Financial premises no longer appear after Interview five; premises and attributes comparing academic and industrial positions no longer appear, and a change in premises and attributes from academic-favoring to industry-favoring occurs. The precise way in which these changes came about is believed by the authors to be related directly to the way the S operates on the information he receives and his premises. This process is described in the following section.

Description of Major Decisions

I. Choice of college curriculum.

Input: (From high school principal) I have sufficient ability for engineering and should go to school.

Constraint: Must major in something.

Premise. I may not have enough ability for a specific branch of engineering.

Decision: Enroll in general engineering.

II. Consideration of career in sociology.

Input: (From experience as dormitory advisor) People and sociology are interesting and (From psychological tests) I have ability to do graduate work.

Premises: Committed to scientific area.

Cannot waste investment in a particular occupational alternative.

Decision: Reject sociology as a career, at least for the time being.

III. Consideration of job choice before entering Navy.

Input: (From plant trips) Information about many engineering opportunities.

Constraint: The need to have an occupation after B.S. is received.

The requirement that he serve on acitve duty in the Navy.

Premise: I don't have enough information to decide on a particular company to go with after serving in Navy.

Premise: (dissonance-reducing) I shouldn't commit myself for the future when I'm not sure of my desires.

Decision: Postpone career decision until end of Navy service.

IV. Consideration of career in Navy.

Input: Knowledge that period of Navy service is ending.

Premises: Navy life is good.

Graduate work is good, and engineering work must not be wasted.

Premise: (dissonance-reducing) Need unlimited opportunity and Navy opportunity is limited since not Annapolis graduate.

Decision: Reject career in Navy.

V. Consideration of graduate work.

Input: Knowledge that period of Navy service was ending.

Successful church and Navy leadership experience.

Premise: Industry provides best opportunity to exercise leadership.

Premise: (dissonance-reducing) Graduate work is good.

Not enough known about industrial management.

Decision: Do graduate work in business administration.

VI. Choice of graduate schools.

Input: (From school catalogues) All schools except Carnegie Tech require student to specialize in one area of management.[1]

Premise: I am undecided.

Premise: (dissonance-reducing) I am not prepared to specialize.

Decision: Apply to Carnegie Tech.

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[1] This probably was not a valid generalization.

VII. Consideration of Ph.D.

Input: (Possibly from question by interviewer) Need to make post-M.S. plans.

Premises: Ph.D. study is attractive.

I am short of money and cannot go further in debt.

Premise: (dissonance-reducing) I can phase the two alternatives.

Decision: Plan to work first and do Ph.D. work later.

IX. Consideration of "conventional" industrial career.

Input: (From contacts with professors and reading) Conventional "materialistic" career inadequate and narrow.

(From school placement bureau) Information about various job alternatives.

Premises: Short of money and cannot go further into debt.

Premise: (dissonance-reducing) Consulting and overseas work both unconventional and well paying.

Decision: Reject conventional career.

X. Reconsideration of Ph.D.

Input: (From professors) If Ph.D. desired, should get it immediately and (also) have ability for Ph.D. level work.

Premises: Short of money and can not go further into debt. Could supplement academic income by doing consulting work on the side.

Premises: (dissonance-reducing) One more year of training will be really productive since now I have enough foundation.

Navy teaching was not a good sample of teaching.

Ph.D. will give me a chance to test my limits. Can set requirements to make sure I don't go into debt.

Decision: Reconsider Ph.D. if I can get fellowship paying at least $2,500 a year.

XI. Reconsideration of industrial career.

Input: (From graduate school) Application rejected.

Premise: (dissonance-reducing) Each individual can decide on his own values and adhere to them regardless of his environment.

Decision: Accept industrial position.

XII. Final job choice.

Input: Offer from Overseas Division of Company Y and offer from accounting firm.

Premise: (dissonance-reducing) Need position which is special, and overseas job is special.

Decision: Accept overseas job.

Obviously these descriptions are subject to the biases and selective perceptions of the authors. They represent highly subjective observations. Some statements made by the S are ignored and others are given prominence. But, assuming that they do not too seriously misinterpret the responses of the S, the authors regard them as supporting the theoretical model of career decision-making presented in Chapter 3.

Even though Jenkins was more deliberate and analytic than most, if not all, of the other 29 Ss, his decision-making still did not display the dispassionate weighing of pro's and con's which would be expected of Economic

Man. Instead, it consisted of a searching for information, for new conceptions, and new variations of old beliefs which would form a self-consistent whole and enable the S to make decisions. The goal of the decision-making efforts of the S can, the authors believe, be accurately described as an effort to maintain cognitive dissonance at a tolerable level.

The ways in which individuals reduce cognitive dissonance when it rises above toleration can be thought of as strategies for decision-making. These strategies, most of which were seen in Jenkins' case, fall into two broad categories: decision-avoiding strategies and decision-making strategies. Some are identical in form; they differ only in the motivation of the individual.

Decision-Avoiding Strategies:

1. Refusal to consider alternatives. The individual refuses to acknowledge that an alternative exists.
2. The sequential strategy. The individual convinces himself that he can adopt two different alternatives by first doing one and then the other.
3. The omnibus strategy. Two alternatives are pursued simultaneously, as, for example, in the case of the individual who holds a full-time position during the day and attends graduate school in the evening.
4. Postponement of decision. This may be achieved by the individual in at least three different ways: He may convince himself that he is not qualified for a particular occupational alternative,

that he needs further education, an advanced degree, for example. Secondly, he may decide that he needs more information about an alternative. Thirdly, he may decide to wait to see if conditions change as, for example, in the case of the student who decides to postpone a decision until the end of the term to see if his grades improve.

Decision-Making Strategies:

1. Alteration of planning horizon. The individual may lengthen or shorten his planning horizon with the result that the requirements for a suitable occupational alternative are increased or decreased in number since the number of possible outcomes are increased or decreased. In Jenkins' case, for example, a career in the Navy was eliminated from consideration by extending his planning horizon into the distant future and observing that it was unlikely that he would ever become admiral.

   In the reverse direction, the individual shortens his planning horizon so as to exclude outcomes which introduce dissonance. Here the individual in effect says, "I will worry about the present and let the future take care of itself," which suggests that this might be called the "crossing-bridge-when-one-comes-to-it" approach.

2. Alteration of requirements. This strategy, which is closely related to the first mentioned strategy, usually involves the invention of requirements which eliminate alternatives. Jenkins

seemed to be attempting this when he exhibited concern over the geographical location of Company Y. At one point in the interview, it looked as if he were going to eliminate Company Y from consideration even though earlier in the interviews he never mentioned it as a serious requirement for an adequate position.

3. Selection by elimination, with and without new information. Following this strategy the individual makes a choice not by deciding which is the most attractive but by deciding which are the most unattractive. One by one he eliminates alternatives because they have unacceptable characteristics until there is only one alternative left.

   This process need not involve the individual's seeking new information but frequently he will do so in a deliberate effort to detect a fact which makes an alternative unacceptable.

4. Reformulation of alternatives. There are at least three different ways in which the individual can reformulate alternatives in such a way that decision-making is facilitated:

   a. The umbrella approach. One alternative is broadened in scope or otherwise modified in such a way it encompasses the major alternatives among which he is in conflict. This is different from the "omnibus" approach whereby the individual simultaneously tries to pursue two or more alternatives.

   b. Choosing an uncommitting alternative. In this strategy, which can equally well be described as a form of postponing decision, the individual chooses an alternative which does not commit him to a long-term course of action. Accepting a college teaching position is an example since college professors are highly mobile into other occupations, except possibly for professors of the arts and humanities. Deciding to serve for a period of military service can also be an example.

c. Adopting a broad, vague plan. When dissonance is introduced because the individual has a highly specific plan or self-perception which conflicts with the realities of the environment, he can eliminate the causes of dissonance by withdrawing from the detailed plan to a more general diffuse plan or more undifferentiated self-perception. Rather than be an industrial market analyst, the individual may, for example, decide that he only wants to be "a success".

Summary

The strategies for decision-making which are described above do not exhaust the logical possibilities. They are, however, the strategies which were most commonly observed in the interviews conducted by the authors in Phase I of the research. The interviews with one subject, long excerpts from which are presented in this chapter, provide examples of most of the different strategies. Obviously the observations of the authors are highly subjective and speculative. Some small support for the validity of the observations is provided by Phase II of the research, which is described in the next chapter, but extensive additional research in this area is needed.

One thing is, however, demonstrated by this chapter; namely, that career decision-making cannot be accurately described as a straight-forward process of the individual following his interests or as a process of impersonal cost accounting. These versions of the process require a degree of self-insight, knowledge of the environment, and information-processing skill which few, if any, human beings have. The main objective of this chapter was to show this.

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Phase II

Chapter 7

The Changing Career Plans of Students of Industrial Administration

The purpose of this phase of the research was to study the development of the career plans of graduate students in industrial administration and to relate the process to the theory of career decision-making which resulted from Phase I and which is described in Chapter 3.

The Personal History Questionnaire (PHQ) was given twice to two different samples of graduate students in the Graduate School of Industrial Administration (GSIA). The first study was to pretest the PHQ and to identify potentially important variables and hypotheses concerning them; the second (the main study) was to test the resulting hypotheses. The graduate students of each sample were given the PHQ when they entered the Graduate School in the fall and again in the following spring.

The two-year program in which the Ss were enrolled led to a Master's degree in Industrial Administration. About 30% of them would subsequently continue as candidates for the PhD. Most of the Ss received undergraduate training in engineering or the natural sciences. About a third had some kind of industrial experience before enrolling. As a group they were above average in intelligence and drive.

The PHQ was given as part of the orientation program just prior to registration. Officially speaking, the students were not required to fill out the Questionnaire, but the impression was given that they were all expected to cooperate. For the main study, seven students who attended non-English speaking undergraduate schools were excused from completing the questionnaire. This fact combined with an entering class somewhat smaller than originally estimated and a high proportion of withdrawals during the year resulted in the final sample of S̲s with complete data being only 45 in number. This was substantially fewer than planned.

The Pretest. The pretest of the PHQ indicated that with only minor changes it would be suitable for the main study. In both stages the written responses were coded for presence or absence of approximately 200 categories of information, such as the type of work setting the respondent said he would prefer, and the kinds of advantages he saw in the position which he had in mind. The guide for this coding is included in the Appendix.

The analysis of the questionnaires completed by the S̲s of the pretest indicated that the sample could not be treated as homogeneous; the men who planned to end their formal education with the Master's degree differed in important respects from those who intended to apply for consideration as PhD candidates after they received the MS degree. (Formally speaking, they were all admitted originally as candidates for the MS only). The investigators concluded that in all subsequent analysis of the results from this population of graduate students it would be necessary to keep the two groups separate.

The differences between the two groups suggested the following predictions: Difficulty of decision-making would increase from the first administration of the PHQ to the second for the Master's degree candidates (the MS students) and decrease for the students who aspired to be candidates for the PhD degree (the PhD students). The MS men would be more certain of the general area in which they want to work, i.e., industry, but would show an increase in the number of alternatives being considered and would show greater indecision on the second administration of the questionnaire. Lastly, the Phd's would be more certain both of their general area and specific interests.

The Main Study. To test the predictions, the PHQ was given on two occasions to the class of 1963. The analysis is based on the scores of the 29 MS and 16 PhD students who took both administrations of the test. The questions have been categorized in terms of their relevance to certain hypotheses in the theory described in Chapter 3 and the category names are the subheadings of this section.

For purposes of comparison, the results are presented in terms of percentages. The exact wording of each question and response frequencies are given in the Appendix. The questions on which the results sections of the report are based will be listed in parentheses at the end of each section.

Results

Manipulation of Premises

The questions to be analyzed under this classification are only indirectly related to the manipulation of premises as these were discussed earlier. They deal with changes in perceptions, considerations and objectives of a career in the nine months which elapsed from the first administration of the questionnaire to the second.

Results. Most of the Ss perceived their MS training more as an education than as a means of acquiring skills or as a means to some career goal. This percentage increased from 60% to 85%. Two-thirds of the sample perceived their career as the performance of some activity. For the MS students, perception of the career as a setting in which to work was second, while for the PhD students it was perceived next most often as a field of knowledge. There was little change between the two administrations (1-1, 1-6).

The criteria for choosing a career also did not change very much, For the total sample, 60% chose it to meet their interests, 15% to meet abilities, and 15% for other reasons. On both administrations 80% of the Ss made no discrimination in their immediate objectives regarding their first position and other long-range objectives such as knowledge, experience, or status (1-7, 1-9).

The PhD condidates did more conscious career planning than did the MS students. Seventy-five per cent of the PhD 's said they engaged in extensive or continuous planning. Of the MS men, 62% did extensive or continuous planning, but this dropped to 50% on the second administration. When asked to describe how difficult their career decision-making had been, 38% of the PhD's described it as extremely or very difficult and 62% as slightly difficult or easy. On the second administration the difficulty of this process increased with 50% of the PhD's describing it as extremely or very difficult and 50% as slightly difficult or easy (1-51, 1-77).

The changes in perceptions, objectives and considerations regarding careers shows that the Ss were actively concerned with the career decision process.

Environmental Influences

Results. The number of events or experiences which the Ss thought would affect their career plans showed a decrease for both MS and PhD men. Sixty per cent of the PhD 's and 55% of the MS men mentioned less than two events on the first administration, whereas on the second test, 70% of the PhD's and 75% of the MS men mentioned less than two. On both tests, 38% of the PhD 's thought that something having to do with themselves (success, failure, ability to do work) would be the most important influence. The MS men, on the other hand, thought they would be most affected by changes in interests due to experience on the job or at GSIA. The change in the number of Ss who mention GSIA as an important influence was interesting. On the first test, 55% of the PhD's and 35% of the MS students thought GSIA would be an important influence. By the end of their first year at GSIA, however, the number mentioning it as an important influence dropped to 35% of the PhD's and 20% of the MS men (3-6, 3-7, 3-8).

These results came from a question in the first part of the PHQ. Another question in the second part provided another view of the nature of the influences on career thinking. The number of Ss mentioning aversive influences decreased from the first to the second administration (PhD.: 25% to 12%; MS: 20% to 14%), whereas mentions of rewarding influences increased for the PhD's (25% to 38%) and decreased for the MS students (30% to 17%). The number of Ss mentioning no influences increased for both groups (0% to 25% for PhD's and 10% to 30% for MS), (9-1).

Discussion. It is difficult to draw any conclusions as to changes in decision difficulty based on the results of these questions. A decrease in the number of influences may reduce the conflict connected with a career decision, or an increase may make the decision easier by giving the subject more information on which to operate (to manipulate premises). It is probably the former explanation which would hold if the influences were incompatible (e.g., aversive experience in industry plus an opportunity for a high paying job there), while the latter explanation would hold for compatible influences.

Alternatives

Results. A general idea about the amount of conflict present in career decision-making can be obtained by examining the Ss self-concept regarding the field of industrial administration.

The definition of the "field of industrial administration" which was used included a group of specialists concerned with administration of organizations per se or research on real administrative problems, as opposed to engineers, psychologists, economists, etc. If S's first mentioned career choice was in line with this definition, he was regarded as being "in IA". If he had recently rejected some other career and was now looking at the field of IA as a new career possibility but had not chosen any specific occupation within that field, S was said to be "moving toward" IA. Fifty per cent of the PhD's thought of themselves as "in IA" at the time of the first administration, 25% were out of IA and 25% felt they were moving toward the field. For the MS men, 80% felt they were in IA with the rest at least moving toward this area. On the second administration more of the PhD's thought of themselves as being outside of the field of IA (12% in, 55% out, and 15% moving toward). The MS men, however, were even more certain of their position in IA (90% in), (1-5).

Further evidence is provided by the realistic expectations of these men as to their first job. On both tests 65% of the PhD's expected to obtain a university job, while 95% of the MS men expected to go into business in some capacity (50% in executive management). When they considered long-range plans, the PhD's were less certain of having a university position (45% on test 1, 50% on test 2), while the MS men were just as certain they would be in business (90% on first test, 100% on second test), (2-1, 3-1).

Obviously, the best indicator of alternativeness is the number of alternative choices being considered by the *S*. On both tests, 62% of the PhD's listed only one alternative, the remainder listing two or more. Sixty per cent of the MS students gave only one alternative on the first test, this number being reduced to 50% on the second administration, the rest giving two or more alternatives. The results are similar when long-range alternatives are considered, although the absolute number of alternatives is generally higher. On both tests half the PhD's listed only one alternative and half listed two or more. The number of MS students listing only one alternative dropped from 55% on the first administration to 40% on the second (2-5, 3-5).

Certainty of career choice is an indicator of ease of decision-making comparable to that provided by the number of alternatives. When the *S*s were asked how they felt about their career choice, when they first made it, 50% of the PhD's had no serious doubts, 18% were uneasy and 31% were still deciding. Of the MS students, 60% said they had no serious doubts, 25% were uneasy and the rest were still deciding. The present feelings about a career choice were the same for the PhD's (50% no serious doubts, 12% uneasy, and 31% still deciding). For the MS men, on both tests, 65% expressed no serious doubts, 14% were somewhat uneasy, and 20% were still deciding (5-29, 5-71).

Discussion. The results of the questions concerning self-concept regarding IA, realistic expectations as to first job, and initial and present feelings about career choice indicate that the MS students felt fairly certain about the general area in which they intended to work, whereas only about half of the PhD candidates felt this way. Thus, it would seem that general decision-making difficulty was less for the MS than for the PhD students.

When it comes to discussing specific alternative occupational choices (both immediate and long-range), however, the MS men have more alternatives than the PhD's and the number of alternatives increases from the first to the second administration of the PHQ. This would be an indication of increased difficulty for the MS students.

Specificity

This category could also be labeled decisiveness or certainty. The questions presented below are concerned with the way the subjects feel about their first career choice regardless of the number of alternatives they are considering.

Results. Decisiveness of career decision changed slightly in different directions for the two groups. On the first test, half the PhD's had made a weak choice (passiveness or no awareness of choice) and half had made a "definite" or "strong" decision. This changed to 40% weak and 60% strong on the second test. The results were just the reverse for the MS men. On the first test 40% were weak decisions and 60% were strong, while on the second test 50% were weak and 50% were strong decisions (1-2).

The scoring code made it possible to determine three types of specificity: in regard to career plans in general, in regard to immediate plans, and in regard to long-range plans. The specificity of career plans for the PhD's was very general on both tests (80% general and 20% specific). The MS students had the same percentages on the first administration but changed slightly in the direction of greater specificity on the second administration. Immediate expectations were general for 70% of the PhD's on the first test (specific for 30%) and this increased slightly to 75% general on the second test. The change was much greater for the MS men : 10% specific on the first test to 35% specific on the second with the remainder broad or general.

The change was large for both groups when long-range career plans were scored for specificity. The PhD's changed from 80% general, 20% specific to 50% general and 50% specific. The MS change was from 85% general, 15% specific to 55% general, 45% specific. (It is interesting to note that specificity is greater for long-range plans than it is for immediate expectations.) Thus, in general, the specificity of the Ss' career plans increased, with the MS students changing more than the PhD's. (1-4, 2-2, 3-2).

Two indicators of permanence of the career decision were obtained which might be referred to as "idealistic" and "realistic" indicators. As can be seen from Tables 25 and 26, there was little change over the year in how the *S*'s viewed the permanence of their careers idealisticly, but "realisticly" speaking, there was a change in the direction of decreased permanence for the PhD 's, with the MS students remaining the same.

Table 25

How Subjects said they would "Like to"
Regard Decisions (Question 5-30)

	PhD Sample		MS Sample	
	1st Adm	2nd Adm	1st Adm	2nd Adm
As "fairly permanent"	44%	44%	62%	66%
As "permanent"	25%	31%	23%	19%
No decision	31%	25%	15%	15%

Table 26

How Subjects Regarded Their Decision "Realistically"
(Question 5-72)

	PhD Sample		MS Sample	
	1st Adm.	2nd Adm	1st Adm	2nd Adm
As "fairly permanent"	31%	56%	55%	51%
As "permanent"	38%	19%	31%	31%
No decision	31%	25%	13%	19%

Discussion. Assuming that anything which signifies increased decisiveness or permanence of career plans is indicative of decision-making success, the changes in decisiveness of career decision indicate that the PhD's were slightly more successful at resolving decision-making conflict than the MS subjects. This may have been because the MS students formed more specific plans than the PhD students did. As mentioned in Chapter 2, one way to avoid conflict is to avoid being specific.

It should be noted, however, that the number of MS students reporting general decisions is always greater than those reporting specific decisions. The PhD students showed a significant increase in specificity only for their long-range career plans. However, in all other cases, reports of general decisions outnumbered reports of specific decisions by at least three to one margins. This would indicate a high level of decision-making difficulty in general.

An interesting conflict is seen in the "idealistic" and "realistic" views of the PhD's. Between the first and second administrations there was a reduction in the number of Ss who made no decision. When these Ss then reported how they regarded the permanence of their decisions on the second administration, the result was an increase in the permanence of how they would "like to" regard their decision ("idealistic"), but a relative decrease in the permanence of their "realistic" view of their decision. This would seem to be a second instance of the phenomena observed in Phase I whereby dissonance was reduced by shortening one's planning horizon.

Social Support

The number of people who were reported as having encouraged the *S*s decreased from the first to the second administration as shown.

Table 27

Number of Persons who Encouraged *S*s

	PhD Sample		MS Sample	
	1st adm	2nd adm	1st adm	2nd adm
Nobody	12%	30%	25%	55%
1 or 2 people	44%	40%	50%	30%
3 or 4 people	44%	30%	25%	15%

The number of *S*s reporting no encouragement increased from 12% to 30% for the PhD's and from 25% to 55% for the MS's. For the PhD students, most of this decreased encouragement was accounted for by a 45% reduction in reports of encouragement from professors. This same decrease was present for the MS students, although not to as great an extent. There were decreases in the amount of encouragement from other individuals (e.g., father, former employer) also, but none as large as that for professors (7-1 through 7-6). Both groups also reported a decrease in the number of people who discouraged them in their career plans, which suggests either that the *S*s received less feedback in general from the environment (perhaps because they are less dependant on it) or that the *S*s were less motivated to give complete answers when they filled out the questionnaire the second time.

Their parents' wishes were more important to the PhD students than to the MS students and the two groups changed in different directions between administrations. On the first administration, 50% of the PhD's attached little (i.e., "not too" or "slight") importance to their parents' wishes, whereas 50% gave them some importance (i.e., fairly, quite, or very). This changed to 44% "little importance" and 56% "some importance" on the second test. For the MS men the results were: 58% "little", 40% "some" on the first test; 63% "little", 33% "some" on the second test (5-31).

Finally, the *S*s were asked specifically to state whether or not certain individuals approved of their career plans. The direction and amount of change in those persons giving high approval were as follows: for the PhD's--"father" increased (46% to 54%), "mother" increased (54% to 73%), "wife" decreased (89% to 70%), and "friends" decreased (46% to 42%). For the MS men--"wife" increased (58% to 67%) and all others decreased, "father" (56% to 46%), "mother" (52% to 38%), and "friends" (48% to 40%), (5-32 to 34, 5-73).

A result regarding the attitudes of the *S*s' parents was particularly interesting. For the PhD candidates not only were parents mentioned as encouragers more often on the second test, but the parents' wishes also became more important. The reverse was true for the MS students; parents were mentioned less often as encouragers, and their wishes became less important. It would be valuable to have information about the importance of professors' wishes relative to the fewer number of times they were mentioned as encouragers.

Level of Aspiration

The *S*s in this study did not seem to be greatly concerned with status (e.g., only 10% saw their GSIA education as a first step in a status heirarchy), although no questions got at this point directly. One indirect way of ascertaining their status aspirations was to see how many of them mentioned it when asked about their plans for a first job. Only one PhD student mentioned status on the first test, and none mentioned it on the second test. The MS students were somewhat more concerned with status, 38% mentioning it on the first administration and 31% on the second (1-1, 2-3).

Asking the men to give estimates of an adequate salary provides a measure of level of aspiration. On the first test both groups were about the same in their estimates of an adequate starting salary: 20% would be satisfied with less than $7500, 40% thought that between $7500 and $8500 was sufficient, and 35% wanted more than $8500 to start. There was little change in this distribution on the second administration for the PhD 's.

The MS students, however, made higher estimates: 17% would now be satisfied with less than $7500, 31% wanted between $7500 and $8500, and 52% thought that over $8500 would be adequate. The *S*s were also asked how sure they were that they would receive this salary. Fifty per cent of the PhD's thought their chance of receiving whatever amount they specified was very good, 25% thought it was a good chance, and 25% only fairly good. However, on the second administration they seemed more certain of receiving the salary they wanted: 62% said the chances were very good, 25% said good, and only 6% said only fairly good. The results for the MS men on the first test were: very good chance, 52%, good chance, 35%, fairly good chance, 10%. On the second administration this dropped slightly to 54% very good, 24% good, and 20% fairly good (1-68, 1-76).

Estimates of an adequate salary five years hence were, of course, higher. On the first test, 19% of the PhD's said less than $10,500 would be adequate, 50% said more than $10,500 (not ascertainable for 31%). On the second test 31% said less than $10,500, whereas 62% would expect more than that. For the MS men 28% expected less than $10,500 and 62% more (10% not ascertainable). On the second test, only 3% said they would be satisfied with less than $10,500 whereas 94% expected more. An estimate of the salary increase expected was obtained by subtracting the expectations for a starting salary from the estimates of an adequate salary in five years. For the PhD's the increases amounted to less than $4000 for 31% and more than that for 38%, with 31% not ascertainable. On the second test these figures were: less than $4000, 42%, more than $4000, 50%. The change was greater for the MS students: those expecting an increase of less than $4000 dropping from 47% on the first test to 13% on the second, and those expecting an increase of more than $4000 going from 41% to 84% (1-69, 1-70).

Discussion. Not much information was gained about the status aspirations of the *S*s in this sample other than the fact that the MS students mentioned it more often than the PhD's.

There was little change between administrations in what the PhD students thought was an adequate starting salary, although they were more confident of receiving this salary at the time of the second administration. A large proportion of the MS students, however, increased their estimates of an adequate starting salary, but this increase was accompanied by a slight decrease in their confidence of receiving this larger sum. Thus, it is concluded: (1) that the uniform level of aspiration of the PhD's coupled with their increased confidence indicates a decrease in dissonance, and (2) that level of dissonance experienced by the MS men decreased less, if at all.

Using estimates of an adequate salary five years hence to indicate changes in level of aspiration showed a substantial increase in this level for the MS students. Further evidence for a rise in aspirations of the MS men is provided by the data on salary increase in five years. Changes in aspiration level for the PhD students can not be determined from this data, since the large number (31%) whose responses were not ascertainable on the first test, distributed their responses fairly evenly among the categories on the second test. This resulted in increases in both the lower and the upper categories. If only those Ss whose responses were ascertainable are considered, there seems to be little change in level of aspiration for the PhD men.

In this discussion some liberties have been taken with the concept of level of aspiration as defined elsewhere. Aspiration level usually refers to the degree of difficulty of the goal toward which the person is striving. In the present context it has been defined as the individual's estimate of his own worth in terms of an adequate salary or salary increase. The subjective experience of success or failure is determined by the relation of the individual's performance to his level of aspiration. If a person's estimate of his own worth increases and at the same time his grades drop or he fails to obtain a desired position, he would probably feel that he had failed. This may not be the case if his level of aspiration also had decreased. In the present theoretical framework, such experience of failure would be said to increase dissonance. Thus, aspiration level plays an important part in the career decision-making process; the PHQ, along with other measures, may be useful in measuring changes in this level.

Barriers

Results. On both tests 25% of the PhD students saw some barrier (e.g., lack of ability) between their present plans and career goal attainment. For the MS men, 20% saw some barrier on the first test, but only 10% did on the second test (1-8).

Advantages and Opportunities

The Ss were asked to list the advantages and disadvantages of the career they were most interested in. On the first test 69% of the PhD men listed three or more advantages, while only 44% of them listed that many on the second test. The change for the MS students was in the opposite direction, 51% listing three or more advantages on the first test and 62% on the second test (11b-1).

Both groups listed fewer disadvantages on the second administration of the test than they did on the first administration. For the PhD's, the proportion listing no disadvantages increased from 19% to 37%, those listing three or four changed from 31% to 25%. For the MS students the changes were: none, 10% to 20%, one or two, 73% to 77% and three or four, 17% to 3%. These changes resulted in a decrease in the net advantages listed (number of advantages minus number of disadvantages) for the PhD's and an increase in net advantages for the MA men (11b-2, 3).

Most of the advantages and disadvantages were relevant only to the Ss themselves. Only 6% of the PhD students and 10% of the MA men mentioned gains for others (family, community) on the first test, while 19% of the PhD's and 14% of the MA students did so on the second test (11b-4).

The frequency with which specific opportunities were mentioned as advantages or disadvantages was also determined. Four categories were used in scoring these responses. The presence of an opportunity could be seen by S as either an advantage or a disadvantage. For example, S might like the financial opportunity provided by industry, but dislike the many responsibilities. On the other hand, S might consider the absence of an opportunity as either an advantage or a disadvantage. For example, he might view an academic career as providing few responsibilities but also a low salary. The following table shows the per cent of the Ss who took a favourable view of particular opportunities, i.e. listed them as advantages if present or as disadvantages if absent. (11b-5 to 12). On the first test the PhD's listed achievement most frequently as an advantage with pleasure second, this order being reversed on the second test. Financial opportunities and autonomy were in third and fourth places on both tests. For the MA students, pleasure was first and security second on both tests with achievement third and financial fourth (these last two were mentioned almost equally often on the second test).

Table 28

Per cent of Ss Taking a Favorable View of

Specific Opportunities

Opportunity	PhD		MD	
	1st	2nd	1st	2nd
Power-responsibility	12%	12%	27%	27%
Status-recognition	14%	6%	20%	10%
Achievement	75%	45%	52%	55%
Autonomy	56%	38%	34%	37%
Tranquility-security	25%	25%	61%	37%
Pleasure	68%	56%	66%	66%
Personal growth	17%	10%	12%	7%
Financial	62%	31%	44%	56%

A second measure of importance of opportunities was obtained by defining importance as the frequency with which a single S mentioned an opportunity or, if all opportunities were mentioned with equal frequency, as the first mentioned opportunity. It can be seen that these two measures may give different results. For example, although 18 Ss may mention financial rewards as an advantage, they may each do so only once. At the same time, 14 Ss may mention pleasure as an advantage and they may each mention it more often (consider it more important). Financial rewards would then have a higher frequency of mention by different Ss as an advantage, but would rank lower than pleasure in importance. Tables 29 and 30 show the opportunities considered as most important and second in importance on the two administrations of the PNQ.

Table 29

Opportunities Considered Most Important

PhD sample

First test	Second test
1. Pleasure, 38%	1. Pleasure, 38%
2. Achievement, 31%	2. Autonomy, 19%
3. Autonomy, 12%	3. Achievement and Security, 12% each

MS sample

First test	Second test
1. Achievement, 24%	1. Pleasure, 31%
2. Security, 20%	2. Achievement, 20%
3. Pleasure, 20%	3. Financial, 20%

Table 30

Opportunities Considered Second Most Important

PhD sample

First test	Second test
1. Pleasure, 25%	1. Pleasure, 19%
2. Autonomy, 19%	2. Growth, 19%
3. Achievement, 19%	3. Autonomy and Power, 12% each

MS sample

First test	Second test
1. Pleasure, 20%	1. Power, 20%
2. Security, 17%	2. Achievement, 20%
3. Power, 17%	3. Financial, 17%

Pleasure is seen to be the most important opportunity on both tests for the PhD students and on the second test for the MS students. This result agrees with that obtained by the frequency measure (11b-15, 16).

Discussion. Assuming that the changes in what is perceived as advantages are not random fluctuations, there is further support here for the view of career development as a dynamic process wherein information from the environment results in the subject's adjusting his beliefs, values, actions, and plans for the future in an effort (as proposed in Chapter 3) to maintain dissonance at a tolerable level. The investigators' expectations would have been that the changes in perceived advantages and disadvantages which took place were in a direction which reinforced the career plans of the *S*s, but a test of this hypothesis was not possible here. The only possible evidence of dissonance reduction is the decrease in the number of disadvantages which were reported by the *S*s. The suggestion is that the *S*s either modify their plans so as to eliminate the disadvantages or they inhibit recall of them.

Work Setting Interests

Results. Both groups showed slight changes in different directions in their interest in working in a large business or industry. Originally, 50% of the PhD men were highly or quite interested in working in this setting. The proportion dropped to 38% on the second administration. The interest of the MS students in this setting, however, increased from 70% to 80%, being highly or quite interested. For both groups, the interest in small business was not quite as high and changed very little between administrations of the PHQ. (1-52, 1-73)

The PhD students became less interested in a university or research institute. All of them were highly or quite interested in this setting on the first test and 62% expressed as much interest on the second test. The MS students, on the other hand, became slightly more interested in a university atmosphere, the proportion expressing at least a fair amount of interest increasing from 37% to 52%. (1-53)

The MS men showed less interest in government or public agencies than did the PhD's and there was not much change between the tests. (1-54)

As expected, the highest setting interest for the PhD students was a university or research institute and for the MS men a large or small business. For both groups, the number of Ss specifically assigning highest interest to one of these settings decreased over the year. The decrease in university interest for the PhD 's was from 44% to 25% expressing highest interest, while the change for MS interest in business was 78% to 71%. (1-56)

Discussion. These results will be discussed along with those for job responsibility interests at the end of the next section.

Job Responsibility Interests

Results. In general, the PhD men showed less interest than did the MS students in the job responsibilities of the business world. These interests decreased slightly for the PhD's between administrations of the PHQ, while they increased slightly for the MS men. Table 31 shows the proportions of each that checked either the "highly interested" or "quite interested" categories on the questionnaire:

Table 31

Proportion Quite or Highly Interested in Supervisory or Advisory Work

	PhD		MS	
	1st	2nd	1st	2nd
Supervisory-executive work	69%	63%	85%	90%
Advisory-staff work	81%	62%	65%	80%
Entrepreneurial or self employment	31%	38%	51%	68%

(1-57, 1-58, 1-74)

Interest in tasks of lower status in the business world was uniformly low for both groups. There was little change between tests in this low degree of interest. The proportion of Ss who were "quite" or "highly" interested in these categories is given in the following table:

Table 32

Proportion Quite or Highly Interested in Sales or Service Work

	PhD		MS	
	1st	2nd	1st	2nd
Sales or promotional work	0%	0%	34%	24%
Employee or community relations	12%	38%	20%	20%
Engineering services	6%	12%	17%	24%

(1-62, 1-63, 1-75)

The PhD students showed much higher interest in research and teaching activities than did the MS men, as was expected. However, the number of PhD 's expressing a high degree of interest decreased greatly between tests, while the interests of the MS students changed only slightly. The proportion of "highly" or "quite" interested Ss is shown in the following table:

Table 33

Proportion Quite or Highly Interested
in Research or Teaching.

	PhD		MS	
	1st	2nd	1st	2nd
Applied research	73%	44%	22%	31%
Fundamental research	57%	25%	17%	10%
Teaching	94%	73%	13%	3%

(1-59, 1-60, 1-61)

The proportion of PhD's specifically assigning highest interest to academic work remained the same on both administrations (38%). On the other hand, the proportion of MS students specifying business activities as their highest interest decreased between the tests from 52% to 37%. (1-64)

Discussion. Much of the value that is attached to a PhD degree in Industrial Administration comes from the fact that it enables the holder of that degree to obtain a position in the academic world. Thus, the large amount of interest expressed by the PhD's in academic activities was not unexpected. Although these men still expressed a high degree of interest in such activities at the time of the second administration, it was less than they had originally stated. A probable explanation of this decrease is that since they were first year graduate students, largely from non-business backgrounds, their interests were fairly flexible. Exposure to other areas of IA during their first year of course work may have led to more varied interests.

The high interest of the MS men in the business world was also expected, since this is the goal of most MS candidates. These men showed more interest in business activities on the second test than on the first test, either because one year at GSIA sharpened their interest in industrial administration or because their interest changed in the direction of their career plans. Their specific interests increased as evidenced by the increase in number of alternative occupations being considered, but these alternatives, for the most part, remained in the area of business.

General Discussion

The prediction that career decision-making difficulty as measured by the PHQ would increase over the year for the MS students and decrease for the PhD's was generally supported by the data. Although the MS men did become more certain of the general area in which they wanted to work, they reported an increase in the number of alternative occupations being considered within that area. Their career plans were also less decisive on the second test than on the first test. Loss of social support and an increase in level of aspiration which was not accompanied by an increase in confidence, added to decision difficulty.

The lower number of alternative occupations being considered by the PhD students, along with the increased specificity and decisiveness of their career plans, provided evidence of more success in decision-making for these men. It should be noted, however, that the PhD's were less certain of a general career area than were the MA students and that they perceived more barriers to their career goals.

The results of this study indicate that the PHQ does provide useful information about decision-making difficulty, particularly the information it provides about number and heterogeneity of alternatives, specificity, decisiveness, and social support.

There are a number of aspects of this process which remain to be investigated:

1. The characteristics of the students who dropped out of school during the year.

2. The characteristics of *S*s whose plans changed greatly during the year and those whose plans did not.

3. The increase in "saliency" of scores. In the exploratory study, it was found that on the second administration of the test, *S*s used more extreme categories in their responses than they did on the first administration. This can also be thought of as an increase in the variance of the scores. As shown in Chapter 4 significant trends are often present in such changes in variance and these are quite possibly related to certain aspects of the career decision-making process. Such a possibility bears further investigation in the case of the PHQ.

A word of caution, however. It is also possible that the result of a year at GSIA is to make the individual more opinionated so that a change in saliency might merely be indicative of a response bias. Some control should be found for this possibility.

Summary

The second phase of the research was primarily conceived as a way of testing the hypotheses resulting from Phase I by means of a larger more homogeneous sample than that of Phase I. The plan was to have first a combined pretest and exploratory study and then a larger study of the changing plans and decision-making strategies of at least 60 graduate students in industrial administration.

The first study showed that the graduate students could not be treated as homogeneous; that there were important differences between two subgroups of the sample: those who were concluding their graduate study with the Master's degree and those who planned to go on for the PhD after receiving the Master's degree. In addition the shrinkage in the sample of the main study was larger than expected, mostly because of withdrawals during the first year. Consequently the final study consisted primarily of a comparison of changes in the career thinking of the 29 Master's degree condidates and 16 PhD aspirants who were present for two different administrations of a long Personal History Questionnaire.

The highly detailed analysis of the Personal History Questionnaire showed that the career planning of the two groups differed in a variety of ways. An effort was made to relate these differences to the theory presented in Chapter 3 with some success, although the small size of the samples involved requires that the conclusions be considered as tentative.

Chapter 8

Summary and Conclusions

This study was undertaken in order to identify the cognitive processes which are involved in career decision-making and the effects of these processes on the developing careers of two different groups of students in higher education. In the first study, referred to as Phase I, ten undergraduate engineers, ten undergraduate women, and ten graduate students were interviewed and tested once a month for seven consecutive months of their last year before being graduated.

In Phase II, two different samples of graduate students, both samples being larger and more homogeneous than in Phase I, were given a long personal history questionnaire at two different times. The first sample provided a pretest of the questionnaire and an exploratory look at the variables and relationships involved in career decision-making and developing career plans. The second sample was planned as a test of the hypotheses resulting from the first but because of an unexpectedly small initial sample followed by a large shrinkage the conclusions are highly tentative.

Earlier research by the principal investigator (1955, 1957, 1960) pointed to the nature of the decision-making process as a crucial determinant of the individual's motivation to devote himself to his occupation and of the efficiency of his efforts. Some Ss either lacked clear-cut goals or were so uncertain of their appropriateness that they were reluctant to pursue them wholeheartedly, while others were so in conflict about their plans that they were unable to enact them with enthusiasm.

The decision-making process was viewed primarily as a special case of complex information processing. The investigators focused on the way in which the students in which the students in the sample gained information from the environment, on what information they paid attention to and what they ignored, on how they reacted to information which was inconsistent with what they believed about the world and themselves, and on how they chose among alternative courses of action on the basis of their processing of information about them. In this theorizing the authors were influenced by the work of Simon and his associates at Carnegie Institute of Technology (Newell, Shaw, & Simon, 1957; Simon, 1955) and the work of Festinger (1957).

The Phase I Method

The investigators planned to give five instruments to each S of Phase I each time he came to the Department of Psychology for his monthly testing and interviewing. Originally these were The Twenty-Statements Test of Self-Attitudes, a specially-constructed semantic differential test based on Osgood's method, a values profile test prepared by Bales, a values test based on Rosenberg's work, and Ghiselli's Self-Description Inventory. In addition, (at the first and last sessions) each S completed an abbreviated version of the personal history questionnaire used in Phase II. After pretesting the instruments, the Twenty-Statements Test was reduced to ten statements, the Bales test was dropped, and the Allport-Vernon-Lindzey Study of Values was substituted.

Originally the interviews were planned to be two weeks apart but this was extended to four weeks when practice interviews indicated that the two-week interval had undesirable effects which were partially overcome by doubling the time interval.

In general, the interviews were judged to be successful, despite the serious participant-observer problem (the decision-making of the Ss was inevitably influenced by the act of discussing it with the interviewers.) and the problem of standardizing the interviews without constraining the verbal report of the Ss. The Ss kept all their appointments even though doing so became seriously inconvenient for some of them toward the end of the year.

From the typescripts of the interviews, the investigators were able to trace the development of each Ss career plans from the beginning of the fall term to the time just preceding graduation. When a decision was made it was usually possible to return to the typescript of an earlier interview and locate the first mention of the alternative, to establish the origin of the information about the alternative, and to detect changes in the S's feelings about the alternative as well as the way in which the alternative was either eliminated from consideration or incorporated in his occupational plans. In one case, a major alteration in the S's plans originated six months earlier in a casual suggestion by a respected professor. By means of the typescripts we were able to trace the effect of the suggestion from one interview to the next.

For some Ss it was not possible to determine the origin of alternatives and of important pieces of information simply because the S neglected to mention them in the interviews, and, in line with the interviewing policy of not pursuing missing facts with direct questions, he was not asked to report about the information. In retrospect it now appears that a somewhat more standardized and probing interview technique would have been advantageous, although the investigators remain of the opinion that if the interviewers had been much more aggressive than they were, subject cooperation and the validity of his report would have been seriously impaired.

The Subjects, Phase I

Early in the research it became clear that the sample could not be treated as homogeneous, that the data from the women had to be analyzed separately from the men and the graduate students separately from the undergraduates. The 20 undergraduates had a median age of 21, and the 10 graduate students a mean age of 26. All of the undergraduates were unmarried and of U.S. citizenship. Four of the graduate students were married and 8 were of U.S. citizenship.

Probably the most surprising characteristic of these 30 subjects was the extent to which they were indefinite about their occupational plans, even at the end of the academic year. At the end of the year all of the Ss accepted a position of some kind, but less than half of them described their plans as being specific. Career decision-making was by and large a difficult process for them; only three Ss classified it as "easy."

The Theoretical Model

The way in which each S gained information about different occupational alternatives and eventually made a choice among the alternatives was studied by examining the recorded interviews. Five possible models of the decision-making process were considered: The attribute matching model, the need reduction model, the Economic Man model, the Social Man model, and the complex information processing model. Each of the models had useful features but each of them had underlying assumptions which were not consistent with the investigators' analysis of the interviews.

The most serious inconsistency concerned the assumptions which most of the models made about the information gathering and processing capacity of humans. The models required a degree of self-insight and knowledge of the environment which few if any individuals have. The investigators observed that as far as self-insight was concerned, the thinking of the Ss was dominated by a small number of self-perceptions - usually less than five.

Similarly, a small number of beliefs about the environment reoccurred repeatedly in each S's report of his career thinking. It was proposed that the decision-making process consists primarily of an effort on the part of individuals to achieve a low level of dissonance among his beliefs or premises and his perception of his behavior. The individual does this by operating on existing premises or by seeking new information about the environment and alternative courses of action. This process is instigated when an input from the environment is inconsistent with the individual's momentary cognitions. Some examples would be information about a job which pays a high salary, or cues reminding the student that the end of the year is approaching (meaning that he must make an occupational choice soon), or a high grade received in an academic area in which the student had never regarded himself as showing any promise.

In its basic structure the dissonance reduction model does not differ markedly from certain other models of career decision-making, particularly the attribute matching model wherein the individual makes choices on the basis of his perception of the match between his perception of himself (his self-image) and his perception or image of the occupational position in question. But the dissonance reduction model is regarded by the authors as different in certain important respects which enable it to account for certain problems which the other models do not handle without major extensions or modifications.

Some of these problems (which are listed in Chapter 3) concern when decision-making begins and where it ends (Individuals do not constantly engage in career decision-making.), what motivates the process, and how the individual makes choices with only limited knowledge of the attributes of alternative courses of action and with limited skill in processing information in ways which facilitate decision-making.

The dissonance reduction model does not answer all the questions; much elaboration and refinement of the model is necessary. But, in general, the authors found that the model provided a better fit to the decision-making which was observed in the interviews than the other models did (although comparisons were not made in a rigorous, systematic way). Also, the model generated a number of hypotheses which are tabulated in Chapter 3 and for which the analysis of the test results of Phase I and the questionnaires completed by the Ss in Phase II provided considerable support.

The Phase I Test Results

Most attention was focussed on the data provided by the Allport-Vernon-Lindzey Study of Values since the scores required less processing and were more immediately relevant to the model than the data provided by the other instruments. As pointed out in the introduction to Chapter 4, statements about what the Ss valued and disvalued occurred repeatedly in the interviews and seemed to play a central role in the decision-making process.

The major finding of this segment of Phase I was that, as predicted, there were systematic changes in personal values which took place during the year for the Ss, all of whom, it will be remembered, were in their last year of formal education and were involved in the process of making an important career decision. On the grounds that there were pressures on each S to realign his values to make them consistent with his actions, intentions, and beliefs, it was predicted that the scores on the Political and Economic scales would increase over the year and that the scores on the Religious and Aesthetic scales would decrease. The results showed that the scores did change in the predicted directions and that for the Political and the Religious scales the linear trend was statistically significant.

This study also showed that there are patterns of personal values which distinguish the members of one occupational, educational, or social group from another, as have a number of past studies which have used the Allport-Vernon-Lindzey Study of Values.

The repeat reliabilities which were estimated for each scale were high and, more important, they did not decrease in the course of the seven administrations of the test. The investigators considered the possibility that in the later administrations of the test, the Ss adopted a rigid response set, automatically repeating their previous preferences but tentatively concluded that this probably was not the case.

In addition, the investigators observed a predicted tendency for the variance of each S's scale scores to increase significantly from the first administration to the last, but the possibility that this was not an independent effect could not be rejected.

The Measure of Subjective Indecision

Chapter 5 of this report was devoted to a description of the development of a measure of the amount of subjective indecision which each S manifested in each interview. The primary reason for this was to have a quantitative means of testing certain hypotheses about the way in which indecision varies during the period of active career planning which was studied in this research.

Subjective indecision was defined as the extent to which a person is undecided about the nature of his future occupational activities. This definition was chosen after at least ten alternative definitions proved inadequate. The most difficult question concerned whether the appropriateness of the S's career plans should be taken into consideration in defining indecision. This problem arises when the S is sure of what he is going to be doing but is not sure that it is a good thing to do.

One aspect of the problem was clear, and that was that we should not be influenced by standards or judgments of appropriateness which were external to the individual. In other words, if the S was sure of what his plans were, then the fact that a panel of judges might have regarded the plans as highly unsuitable for the S was irrelevant and was not allowed to influence the scoring of indecision.

After prolonged study of the question it was decided to limit the definition to indecision and to exclude appropriateness. But in one sense the measure does include an element of appropriateness. It will be remembered that the measure has three ingredients: (1) the number of career alternatives mentioned by the S, (2) the number of times he expresses doubt or indecision about his career, and (3) the number of times he makes qualifying statements about alternatives. In accordance with the decision to include the third category, "I have decided on a career as a physicist even though I do not like the mathematics involved" would be scored as a Qualifying Statement and, thereby, as one point in the S's total Indecision score. In deciding to do this, the investigators in effect decided to score doubt on the part of the S about the appropriateness of his career plans as evidence of indecision. But only in this indirect way does perceived inappropriateness contribute to the S's score.

Only moderate agreement among the scorers was achieved. The rater reliability for Doubt statements was fairly high (.81 assuming that two raters are used) but for the Qualifications it was unacceptably low (.16). The scores used in the Phase I data analysis were no doubt more reliable than reflected by these estimates since most of the interviews were also scored by a third rater, but even so, the reliabilities, particularly for Qualifications leave much to be desired.

Part of the lack of agreement is no doubt attributable to what in retrospect appears to have been an unsuccessful experiment in training scorers. In an effort to make sure that researchers elsewhere, who would not be able to discuss the scoring procedures first-hand with the authors, would be able to achieve the same degree of agreement as the clerical assistants employed by the authors, these assistants were trained only by studying a detailed 13-page scoring manual and by scoring a practice interview. They were not allowed to communicate with the investigators except in writing. The few written clarifications of the manual which the investigators provided were immediately incorporated in the manual.

Spot checks by the investigators indicated that one of the clerical assistamts achieved skill but that the second scorer did not understand the scoring instructions, particularly those for the Qualifications category. She was asked to score two additional practice interviews (which were also incorporated in the manual) after which her scoring improved. The third assistant achieved high agreement with the first assistant after only a few hours of practice. Her scores were not included in the reliability estimate, however, since she did not score all the interviews. The investigators concluded that intelligent and conscientious scorers could achieve high agreement using only the manual and the practice interviews, but that less qualified scorers will require individual tutoring, In Chapter 6 an inventory of some ways in which dissonance can be reduced are presented by means of a case history in career decision-making. The case study, based on the recorded interviews of one of the Ss of Phase I provided examples of most of the strategies for reducing dissonance which were observed in the 210 interviews (7 for each of the 30 Ss). The interviews depict graphically how judgments by respected persons in the S's environment and other information from the environment raised dissonance by introducing alternatives which the S had not thought of previously or by challenging self-perceptions and beliefs which the S held. They also show how the S reduced dissonance by discovering self-convincing reasons for postponing decisions and by discovering courses of action, new information or reformulations of premises which enabled him to achieve or maintain tolerable levels of dissonance.

The summary of decision-avoiding strategies included that of refusal to consider alternatives, the sequential strategy, the omnibus strategy, and postponement.

The second class of strategies, decision-making strategies, included alteration of one's planning horizon, alteration of the requirements for an adequate occupational alternative, selection by elimination, and the reformulation of alternatives by one of three different ways: by broadening an alternative (the umbrella approach), by choosing an uncommitting alternative, or by adopting a broad, vague plan. These are described in Chapter 6 and will not be described further here. As pointed out in the chapter, they do not exhaust the logical possibilities but they do comprise the strategies most commonly observed in the interviews. Whether the inventory of strategies is complete is an empirical question which needs to be investigated in the future. Identification of the most central dimensions of the strategies, i.e., the most important ways in which the strategies differ, also needs attention. Thirdly, research should be designed to ascertain which strategies are most effective in reducing dissonance in the long run. Phase II of this research contributed some evidence in regard to these questions, but full investigation of them will require a much larger, more elaborate design than was possible in this essentially exploratory study.

Phase II

Perhaps the clearest conclusion drawn from Phase II of the research is that within any group of graduate students, those who plan to compete for the Ph.D. degree must be treated separately from those who plan to stop with the M.S. degree, even though they all were originally enrolled in the M.S. program. The values, goals, and cognitive processes of the two groups differed markedly.

Because of a substantially smaller sample size than anticipated, any conclusions based on subdivisions of the total sample had to be regarded as tentative. Many shifts in perceptions and plans were observed, however, from the beginning of the year to the end. Some of the changes represented random fluctuations but others seemed to be reflections of true changes in the cognitions and affect of the Ss.

On the basis of the results of the pretest study it was predicted that the M.S. students would show an increase in the difficulty they experienced in career decision-making over the course of the year, and that the Ph.D.

students would show a decrease. In general, this was the trend which was observed, though on some of the indicators of difficulty the trend was reversed.

The designing of reliable categories for coding the S's responses demonstrated that career plans have a number of dimensions, each of which can vary independently of the others. Included among these are the following:

a. Decisiveness -- varying from passivity to deliberate strength.

b. Specificity -- both in regard to the setting of the occupational plans and the type and focus of work.

c. Instrumentality -- Is the career seen, for example, as a means of performing certain general activity or as a means of achieving a certain goal state?

d. Immediate objective.

e. Number of hurdles or barriers seen.

f. Confidence in outcomes.

g. Attractiveness of expected outcomes.

h. Attractiveness of "ideal" outcomes.

i. Length (i.e., into the future).

j. Expectations of growth in status.

k. Alternativeness of immediate expectations.

l. Ego involvement -- i.e., the extent to which the S sees himself as personally involved in and responsible for the success of his career.

m. Perceived advantageousness and disadvantageousness.

n. Maturity -- i.e., the length of time the S has held the particular plans.

o. Indecision -- the extent to which the S is undecided about the exact nature of his career plans for the future.

p. Heterogeneity -- the difference in setting and type among the alternatives considered.

q. Social support -- by parents, friends, professors, and other significant figures in the environment.

r. Tentativeness.

s. Definition -- i.e., how finely detailed the plans are. This is not the same as specificity.

t. Uniqueness -- i.e., the extent to which no other alternative plans would provide similar satisfactions.

u. In the amount of study and self-analysis which went into them.

v. Continuity with previous plans -- i.e., to what extent do the plans in question represent a change from the last held plan.

Future Research

Some of the directions future research should take have already been indicated earlier in this chapter. These included the need for simple, valid measures of career development, for data on the relation between personal characteristics and indecision, for more study of decision-making strategies and the major dimensions of these variables. A few more will be indicated here.

Probably the most significant problem concerns the origin of premises. In most of this report they have been treated as givens, as if the individual always had certain beliefs and self-conceptions. But, obviously this is not the case.

The problem of predicting which premises are most influential is also important. The investigators' observation is that some premises of the individual are remarkably resistant to manipulation. Certain beliefs of the individual seem to dominate his cognitive processes and his dissonance reducing efforts.

The possible role of unconscious or preconscious factors should receive attention. As a working hypothesis, the investigators in this research assumed that only those premises which the S was aware of and could verbalize played a significant part in the decision-making process. However, frequent observations suggested that unconscious attitudes and needs did influence the process.

Implications

In view of the exploratory nature of this research, any implications must, of course, be regarded as tentative, pending replication and further investigation of the findings which are presented. With this in mind, the following comments are ventured.

1. As far as career research methodology is concerned, an implication of this research is that cross-sectional studies which examine only the gross features of occupational choices run the risk of yielding deceptive results. What appears to be a genuine interest or sentiment can be

a dissonance-reducing invention or a postponing device. The individual's recall of the origins of his choices and premises is likely to be influenced by post-decision dissonance reduction. Dissonant elements will have been forgotten, as well as fleeting experiences which had a significant impact on the S's decision-making. Also, a cross-sectional study may attribute stability to career plans which, in fact, are about to change. Career development is, indeed, a fluid, never-ending process.

2. Research which assumes that expressed values, interests, and preferences are stable over long time periods is likely to be in error. The average values of large groups may remain fairly constant relative to the average values of other groups. The mean Allport-Vernon-Lindzey profile for farmers, for example, may be stably different from the mean profile of C.P.A.'s. But, for single individuals or homogeneous groups of individuals exposed to a common environmental experience, e.g., graduation from college, significant changes will be observed.

3. Observed high indecision is not prognostic of continued indecision. Judging from the trends in indecision for the Ss of Phase I, indecision is highest shortly before it is resolved. This is another reason why cross-sectional studies may be deceptive.

4. What appears to be successful decision-making may, on the contrary, be the result of a decision-avoiding strategy. There are junctures in career development when it is to the best interest of the individual to postpone decision-making, as, for example, when he is missing important information which will be forthcoming at some foreseeable time in the future. The investigators' observation, however, is that more frequently

postponement does not serve the individual well, and may involve him in fruitless exploration and self-analysis and, in some cases, unnecessary investment in advance education.

5. The role of the vocational guidance counselor is an extraordinarily difficult and important one, which will grow in difficulty and importance in the future. Any conclusions from this work which might make his efforts more effective have to be inferred from the results since the research has focused on how students typically make decisions and not on how they should make decisions. The dissonance reducing model is not necessarily recommended as a way of making decisions. But knowing how students tend to behave, the counselor can help students discover how they ought to behave.

Career decisions ordinarily require a man to make a choice among several alternatives, each of which has a host of different outcomes, some of which are certain to occur and others of which are unpredictable. Some outcomes have value, others none; for most value is either impossible to estimate or impossible to compare with the value of other outcomes for lack of a common scale. Faced with this bewildering array of unknowns, and uncertainties, the individual does the best he can. He reduces the problem to some kind of managable form. A number of rubrics have been hypothesized: images, interests, self-concepts, social roles, and -- in this research -- premises.

But, at best, the process is inefficient. Decisions are made from fragments of information without adequate search of the environment or weighing of outcomes. The vocational guidance counselor can counteract these tendencies. It is interesting to note, however, that he can, at least temporarily, raise dissonance for the individual by introducing him to new alternatives and new insights about himself and his environment. This increases the responsibility of the counselor.

The nature of the future may also increase his responsibility. In the past the decision process was easy for many of our young people, perhaps since the number of alternatives open to them was limited, by educational, geographical and social constraints. Decisions were made not by the young person but by his environment. Assuming that these constraints will be less operative in the future, the choice problem will be magnified and so also the task of the counselor.

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Appendix A

Letters Sent to Prospective Subjects

Letter Sent to Prospective Subjects

September 19, 1960

Dear Mr. _________:

In connection with a large-scale research project sponsored by the U.S. Office of Education at Carnegie Tech, we will need the assistance of thirty Carnegie students during the coming year. As one of those who meet certain requirements for the project, you have been chosen as a possible member of this group.

Approximately two hours per month of your time would be needed, and you could count on spending about fifteen hours on the whole project. At the end of the year each participant will receive $25.00. Your part will involve being interviewed and taking several short, written psychological tests periodically throughout the academic year.

We would like to discuss the possibility of your participation in the project further, and would greatly appreciate your calling at Room 335B in Administration Hall before next Friday, September 23.

Sincerely yours,

Thomas L. Hilton
Assistant Professor of Psychology

TLH/eb

Follow-up Letter Sent to Subjects not Acknowledging

First Letter

October 13, 1960

Dear Mr. __________:

In case my first letter did not reach you, I am writing this to ask for your assistance in a project, called the "Senior Year Study" which I am undertaking for the U. S. Office of Education. For statistical sampling reasons it is important that you take part, if at all possible.

The time required on your part would amount to two hours per month, when you would be interviewed and given several short written psychological tests. These could be scheduled practically anytime during the month. Upon completion of the project in April, 1961 you would receive $25.00 and we would be glad to answer any questions which you might have about the project at that time.

My office is in Administration Hall, number 335B. Either my research assistant or I will be available during this week to answer questions and arrange schedules for interviews and tests. Please stop past before Wednesday, October 19.

Yours sincerely,

Thomas L. Hilton
Assistant Professor of Psychology

TLH/eb

Second Follow-up Letter Sent to Subjects not Acknowledging First Two

Dear Mr. __________:

I am writing in regard to my earlier letter asking you to be a subject in the year-long research study we are conducting in the Department of Psychology. My purpose in writing is merely to assure you that we are indeed anxious to have you as a subject. The research is, we believe, significant and has been carefully planned. For certain research design considerations, it is important to us to have a random sampling of the GSIA class of 1961, and you are in this sample. The appointments can be held at your convenience, evenings and weekends included. The results will be held in strict confidence, and we will be glad to discuss them with you.

I recognize that there may well be compelling reasons for your not being able to participate. But, if there is anything I can do to settle any doubts or answer any questions you may have, please give me the opportunity to do so.

I may be reached on extension 289 (my office) or on extension 279 (the Psychology Department headquarters). My office is in Administration Hall, Room 335B.

A return envelope is enclosed in case you need it.

Sincerely yours,

Thomas L. Hilton
Assistant Professor of Psychology

TLH /jad

Appendix B

Interview Schedules and Questions

Interview Schedule for First Interview

(Tell subject smoking is O.K.)

Small talk at first. Sample: What did you think of the World Series?

* * *

Or some other inoffensive query about something that happened recently.

* * *

What are you interested in?

* * *

Then: First will you tell us something about yourself? (Wait)

* * *

Then: What are the main things that you think about these days, that is, when you are not thinking about your school work?

* * *

Or, for example, when you're walking to classes, or lying awake at night -- whenever you're relaxing and aren't thinking about some immediate problem.

* * *

Probe: How much do you think about your future?

* * *

How do things stand right now, as far as your thinking or feelings about the future are concerned? (Light pipe.)

(WAIT! Non-directive - Push)

* * *

What might happen which would upset these thoughts? (or plans?)

* * *

(If no thoughts):

Are you doing anything these days about the future?

* * *

Are you keeping your ears open?

* * *

Are any changes going on in your thinking? In what direction are you moving?

* * *

Recently have you been getting more interested in this or less interested?

1. Present state
2. Direction of change
3. Long or short range?
4. How clear and definite?

* * *

(To get at congruence of expectations and ideal)

Ideally speaking, if there were no practical considerations whatsoever, what would you do?

* * *

Are there any things you have decided you definitely don't want to do?

* * *

Probe: Why was each career alternative which was not chosen actually rejected?

* * *

What were some of the thoughts that crossed your mind when you decided not to go into _________?

* * *

Whenever a new alternative is mentioned, try to get at what happened to the old alternative. How did he happen to pay attention to the information about the new alternative?

* * *

Was he in a state of dissonance?

* * *

Was he searching?

* * *

Whenever an alternative is described

(1) Get at length of plan

e.g., What will you do after that?

or

Where do you think that will lead?

or

Will you venture a guess as to the outcome of that?

* * *

and (2) Try to ascertain how definite the plan is and how specific the details are.

What setting?

* * *

and (3) Ascertain how committed the subject is (any definite steps taken?) to that plan by asking what he would do if blocks are encountered.

e.g., What would you do if you ran out of money?

or

What would you do if you had an accident and lost the use of your hand? (In the case of a pianist)

* * *

and (4) Whether the subject has a realistic picture of the requirements of the occupational role.

e.g., What education is required for that?

or

What do you have to have in order to succeed in that line?

* * *

Do you have any ideas about getting married in the near future?

* * *

What difference would this make in your plans?

* * *

What summer work do you expect to do next summer?

* * *

How about past summers?

* * *

What do you think an adequate career plan should include?

* * *

In other words, when you decide on your next step, what are some of the things you will try to decide?

(Long-range adequacy; highly definite?)

* * *

If you could plan your undergraduate training again, would you attend the same school and take the same course that you did?

* * *

If no, describe the type of school and type of course you would prefer; and explain your reasons for wanting a change.

* * *

(Whenever rejected alternative described)

After you decided against _________ what happened that resulted in your turning to _________?

* * *

Could you try to recall your thinking or the turn of events here?

* * *

Probe: Where and how did he learn about the new alternative?

Were there several alternatives present then, each of which he evaluated or did he just accept the next thing on his list?

* * *

People have many different reasons for their particular vocational plans.

Discuss your early thinking in regard to a career and outline in some detail how your thinking has developed up to and including the present.

* * *

What do you realistically expect to do immediately upon completing your course work here?

(or upon completing military service if you are temporarily entering the service after graduation?)

* * *

If undecided, please describe the possibilities you are considering.

* * *

Before we stop today, are there any other thoughts I ought to know about?

* * *

Do you think what you have told me gives me an accurate picture of your thinking? (If any hesitation, encourage S to comment further.)

Questions for Subsequent Interviews

What's on your mind these days - besides school work?

How is your course work going?

Have you been talking with any of your professors recently?

Are there any discussions which you've had in the last few weeks which stand out in your mind?

What do you hear from your family; friends at school?

Do you get any time for outside reading? What books, magazines have you read recently?

Have any movies or TV shows that you've seen been outstanding in your own estimation?

Could you relate the latest idea or plan to those you've had in the past?

Does it take precedence over them?

(If a decision has been made, ask S to:)
  Review in detail the thinking he did. Did he think about it much?
  Summarize the nature of his thoughts.
  Free-associate about it.

How do things stand right now as far as the future is concerned?

Have any new ideas or plans popped up since the last time we spoke together?

(If so:)

  Find out how specific is it?

  Is it a real departure from old ones - a serious thrust in a whole new direction?

  Where did new plan come from?

  How does S feel about the new idea or plan?

Have you made any decisions we ought to know about?

In a nutshell, summarize yourself as things stand right now.

Objectives:

Get momentary state again. Do not ask S explicitly about changes.

Look for definite decisions.

Look for new alternatives which have come up.

Look for new premises or modifications of old ones to fit with decision, or perceived possibilities or alterations.

Make sure interview lasts at least half an hour to avoid attempt by S to escape through short, incomplete answers.

How do your long-range plans stand now?

Can you think of anything we should add to this interview?

In closing, how would you, in a few words, characterize your present state?

(If no answer)

For example, one subject characterized his state as one of watchful waiting. What would you say?

Questions for Last Interview

Give extra questionnaire. Give check.

Looking back on this year, what have the major influences on your thinking been?

What is your best guess in regard to what you will be doing five years from now?

What will you do if your present plans fall through?

How do your professors (then classmates, and family, and fiancee or wife) feel about your plans?

Do you think the test results will be accurate for you?

Were you influenced by previous test taking?

Appendix C

Coding Manual for Subjective Indecision

Instructions for Coding

Subjective Indecision

Introduction

This code is designed to measure momentary, subjective, manifest indecision. By indecision we mean the extent to which the subject (S) undecided about the nature of his occupational activities in the near future. These words were carefully chosen and should be noted with equal care. The S may be unsure of his long-range plans but if he is certain of his plans for the immediate future his indecision--as we wish to measure it--is low. He may be in doubt about what he actually will do--the industrial situation he is planning to enter may be unstable--but if he is sure of what he plans to do his indecision is low.[1]

The indecision is momentary in the sense that it is concerned only with indecision existing at the time of the interview. It is subjective in that we are interested in measuring indecision as perceived by the S, not by his family and friends, and definitely not as perceived by the coder. The indecision we are measuring is manifest indecision as displayed in S's verbal statements and no attempt should be made to "read between the lines" or to interpret the latent or hidden meaning of the statements.

---

[1] Earlier in this research it was required that the S be sure of both the nature and appropriateness of his plans. Subsequently it was decided that inappropriateness must be regarded as evidence of indecision unless there was evidence that it introduced doubt into the S's mind.

The coder should be objective as possible in his scoring of the interviews. This requires that he become thoroughly familiar with the rules given below and learn to apply them with confidence. An attempt has been made to provide rules which cover most statements an individual makes about career decisions, but of course there will be instances in which it will be difficult to decide exactly how to score a statement. Familiarity with the rules and their application will help to minimize such instances.

Components

There are three components of the indecision measure: (1) number of alternatives, (2) number of qualifying statements, and (3) number of simple declarations of indecision. The components may be found using the following rules.

I. Number of Perceived Alternative Courses of Action at Next Decision Point.

Alternatives must be mutually exclusive in terms of time and place. They must introduce conflict into S's decision-making by making it impossible for him to pursue both alternatives. Example: S cannot attend full-time graduate school and go to work full time in industry. These would be counted as two separate alternatives.

a) Include specific job alternatives perceived as available and desirable (i.e., offers from companies being considered) if S has excluded further full-time education, a military career, and/or other related or unrelated occupational alternatives. Each job offer counts as one alternative until definitely rejected by S. It is sometimes difficult to decide whether a job alternative is perceived by the S as desirable. The real question is "Does this offer create a decision problem for the S?" Is there any evidence that this alternative is present in the S's possibility space, in his "mind's eye" if you wish? If not then it should not be counted. Example: S has decided on civil engineering, and stated this decision, has interviewed civil engineering companies, and has received three job offers among which he can choose. Thus, he has three alternatives.

If a subject says, "If I could get a fellowship, then I would go to graduate work" do not count as an alternative if if it appears that the S sees no possibility of getting a fellowship, and thus, is not faced with a decision to make. But if the S adds "I may try to get a fellowship" then it would appear that he sees it at least as a possibility and that an alternative should be counted.

b) Include long-range occupational alternatives perceived by the S as available and desirable. Example: Undecided between business and teaching or between structural and hydralic engineering. If S is considering job offers in some broad occupational area, count only the job offers as alternatives. Example: S is considering the steel industry and the aluminum industry. He has received job offers from two steel firms. He thus has three alternatives--the two job offers plus the aluminum industry.

c) Include possible short-term alternatives (i.e., for five years or less). These may include full-time graduate school or military service beyond required obligation. Include each school to which S has been accepted as an alternative unless the statement is made that only one is of interest to him.

d) Include choices in different geographical locations if more specific alternatives are not mentioned. Example: S wants to work for X corporation but can't decide whether to go with their New York or their California branch.

e) Exclude fantasy and wishful thinking if S recognizes as such the alternatives mentioned.

f) Exclude summer jobs.

g) Marriage and the family are not considered as a career in this study with the exception of the S who sees being a housewife or a mother as a career alternative which precludes any other career and which must be accepted or rejected just like any other occupational opportunity. There must be explicit statements by the Ss that this is the case; it should not be inferred. Ex. 1. "I am trying to decide between starting a family and school teaching." (Count as two alternatives.) Ex. 2. "I can't decide whether to teach school or not." (Count as 1 alternative unless S explicitly mentions a second concrete possibility.)

Special Rules — Alternatives

1. Separate offers from different departments of a company should each be counted if there is evidence that the *S* perceives them as requiring separate decisions, i.e., as alternatives each of which must be evaluated and decided upon separately.

2. If *S* is considering a possibility just in case his first choice does not materialize, then it should *not* be counted as an alternative, provided that his first choice is definite and unequivocal.

3. Count only those alternatives actually present in the *S*'s possibility space; i.e., eliminate alternatives which it would be impossible for *S* to accept due to lack of proper training, physical ability, etc. In general, count alternatives only if they are possible sources of conflict or present an immediate dilemma.

S wants to go to grad school in engineering and then work in industrial management. Count only one alternative -- grad school, since there is no immediate conflict.

S wants to go to grad school either in engineering or industrial management. Count both as alternatives since *S* has an immediate conflict.

5. Only definite offers from companies or schools should be counted as alternatives. The subject may be expecting an offer from a particular company or graduate school but this should not be counted as an alternative until the offer has actually been received by the subject. However, statements of doubt or qualifications about schools or companies may be counted before offers are made.

6. If an alternative is not mentioned in an interview do not count it even though it may have been counted in a previous interview, unless the subject explicitly says that the general situation has not changed.

7. Count alternatives which have only been tenatively rejected. As long as S qualifies his rejection this indicates some indecision regarding that particular alternative and the alternative should be counted. Example: Count: "I think I'm no longer interested in X." Do not count: "I definitely am not interested in X even though..."

8. Count alternatives only once per interview. We are interested in the number of different alternatives available at the time of the interview, not in the number of times each alternative is mentioned.

9. A subject may state that he is undecided between two highly specific alternatives — e.g., a research job with an industrial firm vs. an assistant professorship — and then later in the interview mention a conflict between two very broad alternatives, e.g., making money vs. making a contribution to education. If it appears that the specific alternatives are perceived by the S as concrete instances of the broader conflict -- as seems likely in the examples given -- then the broader categories should not be counted as alternatives.

II. Number of Qualified (Q) Statements Made about Alternatives.

This code was developed to provide a measure of the number of times the S makes an assertion concerning some aspect of his career but qualifies it in some way indicating some wavering of mind, lack of resolution or lingering doubt about his belief or decision.

Examples:

1. "I'm not interested in chemical engineering but the salaries are high."
2. "There will be a lot of dirty work involved but I've decided to accept the offer."
3. A subject reported that he had decided on an industrial job but later in the interview said, "Of course, I'd really like to teach."

a) A qualification will usually appear in the form of a positive or negative sentence or phrase followed by a positive or negative sentence or phrase about the same subject which modifies (weakens or limits) the original sentence or phrase.

b) In general, the statements will be in the first person singular, and only statements referring to careers, career choices, intentions, S's perceptions of governmental, industrial or academic work should be included. Leave out qualifications about religious, family problems, etc.

c) Phrases are often preceded by words like: if, and, but, while, however, although, even though.

d) Each sentence or phrase and its qualifying sentence or phrase should be included as one unit and counted as such. If two phrases modify a preceding phrase, they should be counted as two qualifications. Example: "I am going to be a salesman for a candy company although I am allergic to sugar and my father doesn't approve of salesmen." Count as two Q statements.

e) Do not count statements of preference as qualifiers. Example: "I got an offer from U.S. Steel today, but this is really secondary to the one I got from Alcoa yesterday." This is not a Q statement since it gives the order in which two alternatives are preferred.

Special Rules — Qualifications

1. Count qualifications even though they might concern alternatives rejected in the past provided they were serious alternatives. Example: "I decided against going into management, although that certainly would have given me a more secure future." This would be counted.

2. Do not count statements which merely define characteristics of alternatives. Example: "I have decided to go into teaching. The hours are good and I enjoy working with children, but of course it doesn't pay very much." This is not a qualification, but simply a description of the job and as such, it is not counted.

3. Do not count positive (favorable) statements about alternatives being considered or negative statements (unfavorable) about rejected alternatives. Examples: "I want to go into the Aluminum industry; I've heard that this is a growing field." "I decided not to be a teacher because they don't have enough respect in the community." Neither of these statements would be counted.

4. If the S is merely listing the pro's and con's of an alternative neither the pro's nor con's should be counted.

III. Number of Simple Declarations of Indecisiveness (D Statements)

This index was designed to provide a measure of the degree to which the S is uncertain about his career plans.

Include statements conforming to the following definition:

a) Sentences and phrases are generally in the first person singular.

b) Statements may state a lack of decisiveness (e.g., "I'm not sure...") or simply a lack of information (e.g., "I don't know...").

c) Only those statements referring to career, career choices, intentions, subject's perceptions of governmental, industrial and academic work should be included. "Academic work" refers to teaching as a career or to graduate school. It does not refer to present course work of the S. Leave out statements referring to religious, family affairs, politics.

It is often difficult to decide whether a statement of doubt refers to the man's career. For example, should doubt in regard to a summer job be counted? The answer is that sometimes it is and sometimes it isn't. The important thing is whether in the eyes of the S the uncertainty or lack of information has any bearing on his career decision-making. This often is not clear. One guide line may help: If the doubt occurs during a time (in the same paragraph perhaps) that the S is discussing his career, it can usually be assumed that the doubt concerns his career even though the connection is not obvious to the scorer.

d) Count as D statements all phrases which include words which introduce an element of doubt (perhaps, probably, sort of, I guess, I might).

Special Rules — Doubt

1. If a statement is both a qualification and a doubt statement, count it as a doubt statement. Ex. "I've decided that I don't want the research position but I'm not sure." Count as one D statement.

2. Statements of probability are not automatically coded as D statements, particularly when the uncertainty is attached to a person or an event in the environment. There should be some basis for believing that the uncertainty introduces some indecision on the part of the S. Ex. "The people at U.S. Steel tell me that they probably will offer me a job." This should not be coded as a D statement. However, if the S went on to say "Therefore I'm not sure what I'll do" the "I'm not sure" is coded as a D statement.

Example 2. "I'm not sure what the people at U.S. Steel are going to do but rather than wait any longer I've decided to accept the Alcoa offer." This would not be coded as a D statement since the uncertainty in the environment apparently has not created indecision to the individual.

When there is some doubt whether the uncertainty is a source of indecision the uncertainty should be coded as D. For example, if in Ex. 2 above the "I'm not sure what the people at U.S. Steel are going to do" stood alone it should be scored as a D statement.

Example 3. "It is unlikely that Company X could pay me that much" should not be coded as a D statement, but if the S said "I can't decide whether Company X is likely to pay me that much" it should be coded as a D statement.

3. Every "I guess" or "perhaps" and similar statements should be counted even though the expression appears to be a verbal habit. The assumption is that a person who has the verbal habit of constantly qualifying his statements with such statements as "I guess" probably is a person who is subject to indecision. "I think" statements are a special problem. The question frequently arises whether the S is making a statement of fact, expressing a considered judgment or whether the statement constitutes a qualification. The fact is that it can be either of the above; the coder simply has to try to decide from the context of the interview what the case is. To automatically code it as a D statement would only be achieving reliability at the expense of validity.

4. Multiple statements of indefiniteness. When more than one element of doubt or lack of information occur in one clause each should be counted. Ex. 1. "I think that the job I got was apparently a fairly desirable job." D count: 3 (I think, apparently, and fairly). If the subject has "a rather desirable job" it would have been difficult to code for the adjective rather can be both a qualifying adjective and an intensifying adjective. As in the case of "I think" statements, the coder has to make a judgment in each case.

5. Sometimes statements indicating lack of knowledge concern alternatives which have been rejected in the past. When this is the case,

the coder has to decide whether the lack of knowledge could influence the subject's momentary decision-making. Is the lack of knowledge of concern to the individual?

Example:

S. I decided not to take the research job.

I. Do you know whether a Ph.D. was necessary or not?

S. No, I don't. I assumed it wasn't. Gee, perhaps it isn't. I guess I should find out.

The above would be scored for D three times. ("No, I don't," "perhaps" and "I guess.")

Example 2: "When I was young I wanted to be a physicist but I never knew anything about it." Should not be scored.

If S hesitates and repeats himself, both phrases should be counted if they are in form of D statements. Example: "I guess...I guess I will enjoy working for Company X." This would count as two D statements.

A Final Reminder

Remember that the code is designed to measure momentary, subjective, manifest indecision, i.e., indecision displayed by the subject during the interview. The coder may suspect that later in the day the subject is going to display more indecision, or that the subject is very cleverly concealing indecision. Or -- and this is probably the most dangerous situation -- the coder may believe that the objective situation of the S is fraught with much more indecision than the S realizes. The S may think he has made all the necessary decisions but the coder may know that he is going to have to make some more or that the S is engaging in some kind of self-deception. In no case should the coder allow these suspicions and beliefs to inflate the I score of the subject.

Appendix D

Scoring Samples

Scoring Sample 1

Subject #24 Interview #5 April 13, 1961

Well, what's on your mind these days?

Well, I'm a little anxious to get out of school right now. I guess there are quite a few things on my mind. My girl is on my mind, where I'm going to be working is on my mind, then I have school on my mind, I'm not quite out yet.

You mean your course work?

My school work, yeah.

. . .

Are you still planning pretty much the same as far as your girl goes?

(D), (A_1) (Q), (Q) I would say at the end of next summer, probably. It's a pretty long wait but probably the wise thing to do since I've now more or less decided to go with Co. X and they have this long three-year training program. It's supposed to be pretty good, but it's long and there will be a lot of traveling involved. And she has to finish school. Well she doesn't have to finish school but it would be a good thing for her to finish school. If she does want to teach she could teach that way. I guess that's what we'll do.

I guess last time you hadn't made that decision about Co. X yet.

(D) Well last time I was sort of learning towards Co. Y, I [illegible] Co. X. As a matter of fact, I don't think I even interviewed them, they weren't in yet. And I had a real good interview with them and I talked with a few people that graduated from our fraternity house last year that are on the program and they're real enthusiastic about it and I've heard from other sources the Co. X's training program is supposed to be one of the best in the country. Since I'm not real sure what I want to do I feel that by going into this manufacturing training program leaning away from engineering a little, I'll get to look around a little perhaps find something that I like.

You say a manufacturing training program, they sort of give you an option to this, do they?

They have their engineering and science mostly to
start in development and they all have their manufact-
(D), (D) uring and I guess also sales and I sort of shy away
from the pre-engineering development type thing. I
(D) think in the long-run I would like to get into the
production, something to this effect.

How did the interview shape up, with Co. X, you said it was a good one?

Well, see I had talked to this fellow before, this John who interviews for manufacturing, he knows the fellows from the house that graduated and went into the program last year pretty well. He came down during the winter and some of us seniors were invited to come and talk with him about it and we had a good discussion. They were about ten or twelve people there. So I had gotten some feel for the program. Then when Co. X came in, they came in with a whole slew of interviewers, I guess about four or five of them and I signed up with the wrong one. I signed up with the engineering and research interviewer and I had a pretty good interview with him too and he mentioned that another man had mentioned my name, so I had an interview with him that same afternoon so I actually talked to two of them. And I really didn't learn a whole lot new about the program but it sort of reemphasized the fact that I was fairly impressed by them the first time. And I have heard quite a bit since about the program.

What other interviews have you had, if any?

Well, I haven't interviewed...I had an interview with Co.
Y the last one and I think since the last time I talked
with you I interviewed Co. X and Co. Y were the only two
that I did have. I'm still expecting to hear from Co. Z.
I worked for them last summer and in fact I'll probably
(Q) get an offer from Co. Z, but the more I think about it,
(Q) the less I want to go with Co. Z, although I kind of
enjoyed myself last summer, it's really not the type of
(D) thing I want to do I don't think for the rest of my life.

Well...could you talk about that a little bit?

Well with Co. Z ... they handle things a little differently than Co. X does. Co. X didn't even give a plant trip before they give up the offer, they just give the offer to go into the training program. With Co. Z, if they're interested in you, they invite you up to their plant and where there are openings, you interview the head office division for a spot in his department. You might even interview two or three different divisions and if they're interested in you they take you into their division and they train you themselves. And the impression I got it would be pretty much for a specific job and their only real openings were in development and design and if I'd go into development or design I would be on the board for about a year and this doesn't appeal to me at all.

The board.

Yeah, this is something that just makes me cringe. Co. W is another one. I interviewed them. They're in my hometown. And I wasn't enthusiastic about the company to begin with but I figured since they're there, my uncle works for them, I'll interview them. And they invited me down to see their plant and I went in and I talked to the chief engineer of the area and also the chief engineer of the plant. They stressed this board idea so much that I just completely turned off. They even seemed a little disgusted with the colleges of the country they say that the engineers come out with the idea that they are going to do exactly engineering. They don't want to have anything at all to do with mechanical drawing and the board and they're not adequately trained.

Sounds like a real old company.

Yeah. He said we're a pretty old company and we don't have a lot of modern equipment.

Were there any other interviews you had that made a particular impression on you?

Well...... I had an interview with Co. A and the impression I had with Co. A is that they were simply interviewing to interview, I mean they had interviewed in the past and things were pretty slow this year they are coming around next year. It was a long time before I heard from them about two months or so and finally they sent me a letter and they said we carefully considered your application, your qualifications, however, we would like you to write to us several months before you get out of the service. They said that their training program is such that they don't want to take anyone in who will have to go into the service. I'm not planning to go into the service real soon. I've heard that this six months deal is out now, is it? Probably the...

Gee, I don't know.

I've heard a rumor to this effect. I don't know how true it is.

I've heard that it is pretty hard to get into because so many people...
Well, did Co. X make you an offer?

Yes.

Oh, that's all sewed up?

I got the offer about a week and a half ago...and I have until May 12th to decide on it.

You said you're leaning towards Co. X?

I would say it's on the standpoint of Co. X. There's
still a small problem at home, with Co. X I won't be in
(A_2), (D) the area whereas if I would take the Co. Y offer I might
possibly be shifted around for four or five months or so
but if I weren't more than likely I could alternately be
placed in or around home because they have a lot of
(Q) plants in the area but with Co. X they don't have a plant
near my home so I would be away from home quite a bit.
This weekend I'm going home. I'm going to a wedding and
(D) I'll talk with my parents but I think I'll accept Co. X's
offer. I even got more moneywise from Co. X than I did
from Co. Y so because of the pay I'll more than likely go
to Co. X. They offered me more.

Well are there any bull sessions or discussions, formal or informal about anything that's come to your mind?

No.

Talked to professors or...

I haven't talked to my professors lately.

Well, let's see. What gets talked about now, say over at the house?

Well right now I would say mostly the job situation. People are going out on plant trips and they're still interviewing some of them. A lot of them are waiting anxiously. Quite a few of them don't even have an offer yet and are pretty well shaky by now. So aside from that we just had elections at the house and we have new officers coming in and this is quite a topic of discussion.

. . .

Well could you sort of comment a little about how other people in your situation are making up their minds about what they are going to do next year?

(D) There are several different attacks where a man has interviewed and interviewed and interviewed. There are a couple of fellows in the department that I would say have interviewed about 25 or 30 different companies and a lot of them in particular have pretty good grades and he's married and he's been in the service and he's had work experience in industry so he's had quite a few plant trips and I think has three or four offers now and he's traveling all around. Once or twice a week he leaves school for a day or two. And then there's a fellow who's had rather poor grades and he's done a lot of interviewing and not a whole lot has resulted from them and he's getting a little worried. But I would say in general most of the people have a little better idea of what they're looking for than I do because as I said I really haven't decided on what I want to do whereas some of these people say they want to work with heat transfer or some form of mechanical design. They know fairly well what they're looking for and this helps in picking out the company they want to interview and some have it in their mind that they want to live in California, locations help to pick out their company. Some want to work for aviation or airplane company. There are a lot of different approaches to it I think.

Are any of them sort of, well, undecided?

Yes, quite a few are undecided. Some you know maybe they have an offer that they're not really enthusiastic about and they haven't heard from a company that they are more interested in and they are sort of holding out and waiting to hear from this company.

. . .

Do you forsee any real problems when talking with your parents?

(Q) It's not real problems in the sense that no you can't do this but my mother...there won't be any real crying but it will hurt her a little the fact that I'm leaving. I could be working for Co. Y and it would be a little closer to home but I would rather not. I've heard quite a few things from several people about Co. Y and their training program and the fact that people got lost in there and sit there for fairly indefinite times. I've talked to a couple of the people in it who aren't nearly as enthusiastic to Co. Y program as people I've talked to about Co. X's training program everything does point to Co. X.

Scoring Sample 2

Subject #25 Interview 3 April 8, 1961

Well, what's on your mind?

Well, nothing but school. I guess that isn't entirely true. I guess my job is somewhat on my mind too. But not nearly as much. I just have nothing to do right now but pass all my courses and try and graduate. And keep my boss happy until after I graduate and then maybe I can concentrate on the job.

How are things coming?

Well not bad. It seems like I have quite a bit of work ahead of me. It just doesn't feel like anything's going to be over in a few months. In fact it seems to me that I have so much work to do that I can't even imagine what it will be like when it's through. Well I guess I haven't even allowed myself to think about it.

When you say work you mean academic work? Papers and...?

Yeah. Mostly papers. I guess these qualifiers or comprehensive exams; I'm a little worried about those. I haven't started to study for them and I think I should. I think I should have by now.

Have you done any thinking about the future at all.

Not very much. I've had awfully bad luck with my mining companies. You know I described to you the plan that Prof. Alpha and I had, contacting the presidents? Well, it turned out to be 100% unsuccessful. So...

I wonder why.

I don't have any idea. I was really kind of surprised.

It seemed like a reasonable...

Yeah, I expected at least one positive answer, but I didn't get any. In every case they wrote back and said there was nothing available. And I think by the tone of some of the letters, they really thought that I was being a little presumptious. So I wouldn't recommend that strategy to anyone else. I have some other jobs that I've approached the conventional way that I'm not really too interested in. So I guess I'll be going with Co. X.

And you looked into these other jobs...for what reason?

Well mainly to give me some leverage in bargaining with Co. X. But...well in one case my father-in-law, who's sort of agitating me to find a job out in the West, recommended a company and I talked to them. One of the missile...Co. Y. They have some facilities out in the West. I talked to them and--without much enthusiasm. Strangely enough they're the most interested people in me. They've... I didn't scare them off by telling them that I wanted an especially high salary or anything like that. They seemed to...that didn't both them at all. In fact it seemed to attract them. So...but I don't expect I'll go with them. I'm not really interested in the business at all. I just don't have any background in aeronautics or missiles. And I feel like this might be a disadvantage.

What kind of work would it be?

I'm not sure. They haven't really decided themselves. They just keep telling me that you can be a manager in any industry; that you don't have to know everything about the industry to be a manager. That's their attitude. Which is a reasonable attitude I think but I don't quite agree. I think you ought to know a little bit more than I do about the business that they're in. And besides that I think you ought to have a little more interest in it than I do. Not that I'm disinterested at all but it's just that for 30 years...or somewhat less than 30 years...I've been completely wrapped up in the mining industry and I still am.

What would you do with Co. X?

I'd go with the Commercial Research division. The group that I've been working with.

How about the long range future?

Well, I don't know, it seems to me that there are two alternatives available to anybody in my position...well to anybody, period, I guess. That is, you can sort of plan on working your way up as an organization man, so to speak. Or you can plan on the entrepreneurial route and I...which is more attractive to me than just becoming an organization man...or I should say just becoming, but I feel that there would be more personal satisfaction for me if I were to become an entrepreneur of some sort.

and I guess I'll always sort of keep my eyes open for any opportunity. Also with the realization that as I grow older and as I begin to accumulate a family why it's going to become more difficult for me to make a move that might...In fact I've almost...I think I've almost passed the point of no return, now. I'm not sure but I wouldn't be surprised if I find myself from here on out now almost unable to justify the risk.

* * *

Do you recall any particular discussion with your friends?

Oh, all the talk now is about jobs. That's universally the only thing that matters right now in the world. And frankly I'm not as interested in that subject as I probably should be. I've sort of resigned myself to my job and it's not new and exciting to me; I've been working at it for almost a year now so... I would expect the rest of my classmates to be quite a bit more enthused about their prospective jobs that I am, about mine.

What's your reaction to their...you know, the comments that they make about the jobs that they're looking at?

About the only reaction that I've had is that I think that they're almost all of them overpaid. Well, I'm quite a bit older and I'll make...and I'll be getting quite a bit more than will probably 80% of my class anyway. And this seems normal to me. I don't know why I should be maybe 10 years from now why I wouldn't think that age would have much to do with pay but right now I'm rather surprised to find some few of them getting offers as high as I am. I mean some of the 22, 23 year olds, that are being offered $9,000 a year; this seems pretty darn high .... It's not very clear to me that a person that age is worth that but then this again is...it's not real clear that there should be any correlation with age, you know. But just...well in the school that I'm in why probably no one would appreciate my saying that it doesn't seem right because, you know, things don't seem right or they don't seem wrong over there.

Well if it's any comfort to you, some of the boys themselves have expressed surprise that they're being offered so much. I think they're a little chagrined in some cases. A little embarrassed by the amount that they've been offered.

Well, how about such things in general...radio, television?

Don't listen to the radio except when I'm driving my car and I don't watch television except to watch the news. This is somewhat of a change from last semester. You may recall that I spent a little more time watching TV that I should have. It's very easy to watch, you know. You don't have to think. All you have to do is just sit. And I just really don't have time to watch TV. Now my conscience bothers me whenever I do this now.

Well, are we up to date pretty well, do you think?

I think so. I can't think of any impressions that have changed.

How would you characterize your momentary state?

Anxious. I guess I'm consumed by anxiety. I'm really very much interested in getting through school. And I know I'm going to have to work very hard to do it so... I don't seem to be able to think about anything else. This is a little bit different I suppose than the past.

Coding Results (S #25, I-5)

Page	Type	Description
254	D	I guess my job is
254	A	Mining
254	D	I don't have any idea
254	D	And I think by the tone
254	A	Co. X
255	D	I guess I'll be going with Co. X
255	Q	High salary did not perturb Co. Y
255	D	I feel this might be a disadvantage
255	D	I'm not sure
255	Q	Not that I'm disinterested...but it's just
255	D	Well, I don't know
255	D	It seems to me
255	D	To anybody, period, I guess
255	D	Sort of plan
255	Q	Which is more attractive...but I feel
256	D	I guess I'll always
256	D	I think I've almost passed
256	D	I'm not sure
256	Q	Unable to justify the risk
256	D	I've sort of resigned myself
256	D	I don't know why I should

A - 2

Q - 4

D - 15

Scoring Sample 3

Subject #19 Interview #5 April 13, 1961

Well, what's on your mind these days, Mike?

Well, I've accepted A. University's offer to graduate school for one thing. And right now I'm in the process of deciding where I want to go for summer work. It's not so much the problem of deciding as the offers haven't come through yet. One has but I don't particularly want to go there. There's a company down home that I wanted to go to but they said they wouldn't notify me till later in April, so I'm waiting to see what they have to say.

Was that Co. X?

No that was Co. Y, here in Wheeling you know. I'm waiting to hear from Co. X, but I haven't yet though.

So you're all set up for next year?

Yeah, I think so. I've thought about it quite a bit. I guess that was the best offer, for the most part.

What does that mean?

Well, financially and as far as the programs they have there. I don't know really I guess the more and more I go along I don't know whether I can make it through graduate school. I had originally thought that I could get a doctor's degree but things are beginning to change. I think more now that I'll be going to grad school to see what it's like, nor from the point that I'm not going to work, I will work and if I can do it I'll probably stay on. But I'm not really sure now that I want a doctor 's degree in metallurgy. I know of one company here in Pittsburgh, Co. Z, who is looking for a metallurgist, one to work in sales and business. I'm going to interview them and see if they're interested after I've gone to B. University and come back or not. I'd like to work for them and this I think is eventually what I'm after now. But I become a little more doubtful as I go along as to whether I'm capable of doing the work in metallurgy, if I was I'd want to do it, but I'm not sure at this point if I am. But I'll go and see.

Is there anything in particular that brings about this attitude?

Yeah, I think it's, well perhaps this senior year towards the end in interviewing some companies and going and speaking to them; I've gone on several plant trips.

Yes, I never had industrial experience before so now I had originally thought research is what I wanted. So when I go on the interviews they show me their research facilities and they put me to this crossfire of what I think research is and all that doesn't seem as though I fit into the picture as well as I thought I would. It's much more scientific than I expected. I don't know whether I want to stay in metallurgy and not research but I don't know they kind of turned me away. I guess they wanted to find out for sure if I wanted a research position so they're interested in finding out whether I'm capable of doing it and they started me thinking. That plus, well, I had thought about some of the subjects I might be taking and I can just see them continuing from what I'm doing now, I'm not really sure whether I can take it or not. Maybe its just a psychological thing, that when they talk to you like that, they purposely try to depress you. And it certainly had an effect.

What sort of questions did they ask?

They get right down and propose problems and I don't know if I was prepared or not. They would show me the kind of work the lab was doing now and they would ask possibly what could be done and perhaps I went into the interview not thinking this would be it and I particularly wasn't prepared for it and it made me think whether I was in the right spot or not.

Well, I guess what...has this pointed your thinking more in any other direction of other possibilities?

Yeah, probably it's made me think that I don't have as good a grasp of metallurgy as I could have, to the point where I can major in metallurgy completely; in other words research work. From all the activities I've had on campus and financial thing I've done Treasurer and all this I kind of like this and perhaps it made me think that something to do with metallurgy or a consultant type of position. That's why I say this one offers perhaps might be interesting. I can't really say that I've made a final decision out of what I've originally planned and it's made me a little less sure than I was and I'm not going to grad school now with the idea if I can do it I will I'd be glad to but I'm not sure that I can now.

But you say you're going to S. University.

Yeah, I'll definitely be going to S. University for one year and from then on I'll have to see. I'm interested in finding out whether this company might, it's a small company from what I understand and they might be interested in just taking ah, a man now and not worried about later and what happens after I got to J. University and if they'll be interested in me.

Do you mean then that if you get a job you'll take the job, they made you an offer?

No.

Yeah, I see. If they want to take you on you'll go there instead of to J. University.

Not for next year. That's established. After that, they might be interested in me and I might be interested in them. I haven't thought this thing out completely. I want to go at least one year and see what it's like and then from there, well I'll...

It's kind of hot in here. You say with these activities you've had as Treasurer and the financial angle you might be more interested in working in this line?

Yeah, something more perhaps finance or public relations or something where I can use my metallurgy background... Just working in business, finance...whatever it might be. The kind of work I've done in activities around here. I'm treasurer of several organizations and I've met a lot of people this year and I think this is the kind of work I like but still I don't want to completely throw out metallurgy. Sort of a combination of the two somewhere along the line.

Could you sort of talk a little bit how you perceive business and research?

Yeah, my opinion now after I've seen some of these toward research as far as I can see a person is not necessarily locked up in a laboratory, but he's expected to be very, very scientific to be very, very creative ah, well to be able to either be thrown a problem and to see ways of solving it... and going about finding the right one, this type of thing I don't particularly mind. The impression I got recently is that you have to be scientific to the point where you have to think your solutions up and well, it's something that's perhaps less practical than I would want to be and call it a scientist. But I guess it's much more creativity than I can see myself having. As far as industry goes I really don't know that much about it. I've never looked into the other phases of metallurgy where I could go into a plant, I've never thought of it. I 've always thought I've wanted research, so I've never given a thought to these other ones. But I guess the industry, well what I would like to get into is something where ah...you can use your metallurgy background and well, not be expected to be an expert in the field. I don't know, the impression I've had from these people... they're not going to bet necessarily that you know this stuff inside out; that you seem to know your field perfectly. I don't imagine they expect you to go on the graduate school. You tell them you want to go on to graduate school so then they get the impression immediately when you come out as a doctor that you'll be able to fit in and you're a pure scientist and I just can't see myself like that.

I don't remember if you talked about this earlier in the interviews, but could you go over a little bit what first made you think of research?

Yes, I think, well ah, I think it was through the process of elimination, it was part of it. I saw what I could do with a degree in metallurgy and I didn't want, and I still don't, I don't think, to work in a mill where you're making steel and things of this nature, so I immediately eliminated that and the only other thing left was something they call quality control where you're still in a mill but it's a little more oriented towards research so through that and the lab work we do at school, which for the most part I guess is the type of thing I'll be doing in research work and it seemed that this is what I'm after, where you sit down and study ah,...metals and the properties and you just run tests and see what they're up to. And I think what my problem was I just didn't know what these different fields were and it became obvious. Then I didn't have any experience so I couldn't point to a pure definition of them.

Have you settled on your courses for next year yet?

No, I wrote, I've written and asked them what ah...what kind of courses I'll be taking and I'm expecting a reply soon. I asked about the person I'll be working for. I looked at their catalogue but that's not usually very informative on things, what's the individual got to take so I haven't decided that yet.

You have an assistantship there?

Yes, a research assistantship.

That ought to have just come through then, didn't it?

No, I had that offer for about two months now, they made it very, very early and really surprised me, about a month and a half. My other offers just came this past week but S University's came out very early, I don't know why.

Well, as I recall last time there was still a choice between a couple of schools, S University being one of them.

Yes, right, I think the last time I think I had received that offer, I'm not sure, and I was waiting to hear from the other schools hoping that...well I thought personally that S University was the best of the schools and that I had applied to and I thought if I got what I considered a good offer from them then the other ones might made me something, so this is one of the reasons that I was still doubtful. Then when they came through for the most part they were comparable as far as finances were concerned and so I says S University.

Because you thought it was the best school.

Right. Oriented in the type of work, type of knowledge and also the fact that it's a little closer to home...than some of the schools were.

Could you comment a little bit about what your classmates are doing in the way of looking for jobs, how they're going about it and so on?

Yes. I guess about 85 to 90% of our class have already decided where they're going to work. They all got, for the most part, two or three offers now and they're just down to the picking of the last ones. Up until about two weeks ago they were pretty worried about where they were going to go the companies weren't coming through, they were a few scattered offers here and there. The majority of them, I would say, interviewed at least ten to fifteen companies, the ones that they were really interested in at first and then they saw that the company would say in two weeks we'll notify you and they saw that this wasn't working out so they became a little worried and so they began interviewing a few more and I guess until a little before Easter and recently the plant trip offers and business dates were coming through so I think that, perhaps I should say 100% of them received offers and about 90% of them are sure where they are going to go.

Are there any in the position comparable to yours, torn between graduate school and different directions they're going to take and so on?

I think of the twenty on our department that are I think there are about seven or eight considering graduate school and of these seven or eight...five I would say, definitely know what they want and exactly what school they are going to go to and well these people are perhaps the top class and they know exactly what they want. I imagine there's maybe one or two fellows who doesn't know exactly what he wants in grad school, not so much along my line but perhaps whether or not he wants to go to grad school or not. They're still undecided about that and they've gotten good offers from grad schools and companies soon I imagine have to reach a decision. I don't think there's any individual that might be stuck along the same lines that I am perhaps more on this whether they want to go to grad school or not.

When you say "stuck" you mean on the whole you're in a particular dilemma?

Right, undecided, you know.

Undecided about what type of grad school or...

Undecided about whether grad school is for me. I want to go and try it out now, whether or not I can make it through. If I see that I can, I want to. But there's no use of trying for a Doctor's degree when I'm not capable of it. I would very much like to but I'm not going to be disappointed if I see that I can't...I'm not capable of getting it.

How is the summer job situation?

Well, I mentioned that I have one offer to work here at Co. Z, but unfortunately they have asked me to notify them by this Friday, which is tomorrow, whether or not I want it and the company down home and three or four others among which is this Co. X, right near S. University haven't told me and I don't expect them to tell me until the end of April so I'm not really sure what to do. I think what I will do is...to be fair and turn Co. Z down because I wouldn't feel,...I know that if one of the other companies comes through I will accept it so with Co. Z I'll just have to take the chance and turn it down.

. . .

Well, do you think you could sort of characterize your position right now in a few...few words?

5

You mean where I stand?

Yeah.

Well, I guess I should say as every day goes along more and more I want to get out of here. I'm in a spot where I'm not particularly interested in sitting down and doing school work. I want to get out as soon as possible and I'm undecided as to exactly what I want to do in the future because of my wife. I would like to get out and find out exactly what I'm doing so that I can make a decision. I'm sort of half decided, I guess you could say, and as far as I'm concerned, the sooner I get out the sooner I can solve my problems.

Coding Results (S #19, I-5)

Page	Type	Description
259	A	S. University grad school
259	D	Yeah, I think so
259	D	I guess that was
259	Q	For the most part
259	D	I don't know really
259	D	I guess
259	D	I don't know whether
259	D	I really don't think
259	Q	But things are beginning
259	D	I think more now
259	D	Probably
259	D	I'm not really sure
259	D	But I become
259	Q	If I was
259	D	But I'm not sure
260	D	I don't know whether
260	D	But I don't know
260	Q	Kind of turned me away
260	D	Made me think whether
260	D	Yeah, probably
260	D	Perhaps
260	Q	I can't really say
260	D	It's made me a little less sure than I was
260	D	But I'm not sure

Page	Type	Description
261	D	I haven't thought this thing out completely
261	D	Sort of locked up
261	D	Perhaps less practical
261	D	But I guess
261	D	I really don't know
262	D	But I guess
262	D	I don't know
262	Q	I can't see myself as that
262	D	I don't think
262	D	I guess
262	D	It seemed that this
264	D	Undecided about whether
264	Q	But there's no use trying if
264	Q	I would very...but I'm not
264	D	I guess
265	D	I guess
265	D	I'm undecided
265	D	I've sort of half-decided

A - 1

Q - 8

D - 33

Appendix E

Personal History Questionnaires

This Appendix contains the two forms of the PHQ given to the Ss in Phase II. The first form consisted of two parts and was administered in September. These two parts were combined and were slightly condensed into one questionnaire which was given in May.

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Name________________________

Date________________________

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Part I

PERSONAL HISTORY QUESTIONNAIRE

Give as complete answers as you can to the following questions. Please try to elaborate on one-word answers that occur to you. If you need more space, use the back of the sheet, making sure that you number each item. Starting with the first question, answer each question in order.

1. People have many different reasons for their particular vocational plans. Discuss your early thinking in regard to a career and outline in some detail how your thinking has developed up to and including the present.

2. What do you realistically expect to do immediately upon completing your course-work here (or upon completing military service if you are temporarily entering the service after graduation)? If undecided, please describe the possibilities you are considering.

3a. Briefly describe whatever long-range career plans you may have. If undecided, please describe the different possibilities.

3b. If your plans are in any way tentative or indefinite, what events or experiences are likely to cause you to modify them or accept one alternative rather than another?

4a. When did you first seriously consider the possibility of the career or careers mentioned in 3a?

4b. What study or work were you engaged in at the time?

5. When did you definitely decide upon this career? (If you have no plans or you are still undecided, please state.)

6. What other professions or occupations did you consider seriously? For each, indicate the period in your life in which you considered it and the extent to which it is still a possibility. Examples: "Medicine, during high school, remote possibility now," or "Civil engineer, early in college, still a possibility."

Occupation	When	Present possibility

7. What specific persons encouraged you in your career decision? (If none, please state and if your plan includes alternatives, note which the person favored.)

8. What specific persons discouraged you? (If none, please state and note which part of your plans the person did not favor.)

9. What personal experiences influenced in any way your career thinking? (Describe the nature of the influence. If none, please state. If fully answered already, write "See above".)

10. Briefly describe any long-range, permanent, occupational opportunities you may have had which you rejected. Examples: "Position as civil engineer offered when I received my B.S.," or "Position in family firm."

11a. We realize that it is very difficult to plan far into the future, but if everything goes as you hope it will, what kind of a job would you like to have five or six years from now?

11b. When a person makes a choice of a career or profession, he expects certain personal satisfactions. He weighs certain advantages and disadvantages. What are some of the advantages and disadvantages that you expect from the career you have in mind?

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Name________________________

Date________________________

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Part II

PERSONAL HISTORY QUESTIONNAIRE

In the following questions, when you are asked to make a choice, check or circle only one answer. If none of the choices seems to fit you very well, check the one which most closely fits you. Write in any comments or qualifications that you care to make.

Which of the following best describes your career decision-making? (Check one.)

1-51 0. (   ) An extremely difficult process.
1. (   ) A very difficult process.
2. (   ) A rather difficult process.
3. (   ) A slightly difficult process.
4. (   ) An easy process. No difficulty.

Regardless of your present plans, how interested would you be in a career in each of the following work settings. (Check appropriate boxes.)

		0 Definitely Not Interested	1 Not Too Interested	2 Fairly	3 Quite	4 Highly
1-52	Large Business or Industry	( )	( )	( )	( )	( )
1-73	Small Business or Industry	( )	( )	( )	( )	( )
1-53	University or Research Inst.	( )	( )	( )	( )	( )
1-54	Govt. or Public Agencies	( )	( )	( )	( )	( )
1-55	Other (describe below)	( )	( )	( )	( )	( )

Similarly please indicate how interested you would be in each of the following kinds of job responsibility.

		0 Definitely Not Interested	1 Not too Interested	2 Fairly	3 Quite	4 Highly
1-57	Supervisory executive	☐	☐	☐	☐	☐
1-58	Advisory: Staff or consulting	☐	☐	☐	☐	☐
1-59	Applied or developmental research	☐	☐	☐	☐	☐
1-60	Fundamental research	☐	☐	☐	☐	☐
1-61	Teaching	☐	☐	☐	☐	☐
1-62	Sales or promotional work	☐	☐	☐	☐	☐
1-63	Employee or community relations	☐	☐	☐	☐	☐
1-74	Entrepreneurial, self-employed	☐	☐	☐	☐	☐
1-75	Engineering services	☐	☐	☐	☐	☐

1-66 Describe any city, community, or geographical location in which you would like to work in your first position. If no preference, please state.

1-68 What annual salary would you consider as an adequate income for your first position after graduation?

____

1-76 What chance do you think you have of being offered this salary? (Circle one.)

1. Very little 2. Fairly good 3. Good 4. Very good 5. A certainty

1-69 What annual salary would be adequate five or six years hence? ____________

If you have given any thought to it, what kind of a position will you seek if you do not do well in the first position you have in mind?

( ) Haven't thought about it.

5-24 In what other professions or occupations, if any, do you feel you would find satisfactions similar to those of the career you have in mind? (If none, please state.)

____

____

____

____

5-27 What are the satisfactions which would be similar?

Return now to question 5-24 and very briefly note the principal reason, if any, for your not entering the occupations listed.

1-77 How much conscious career planning have you engaged in?

1. ( ) Very little. I cannot recall thinking about it much.
2. ( ) Some thought has been given from time to time.
3. ( ) Quite a bit of study and self-analysis.
4. ( ) Extensive study and self-analysis.
5. ( ) Continuous study and self-analysis.

5-29 Which of the following best describes how you first felt about your current career choice, i.e., at the time you made it, how did you feel about it? (Circle one.)

1. Decidedly uneasy 2. Somewhat uneasy 3. O.K.; some doubts, but no serious ones 4. No qualms whatsoever

5. No "choice" yet -- still deciding

5-71 How do you feel now about your current career choice?

1. Decidedly uneasy 2. Somewhat uneasy 3. O.K.; some doubts, but no serious ones 4. No qualms whatsoever

5. No "choice" yet -- still deciding

5-30 How would you like to regard your career decision as it now stands?

1. As very permanent 2. As permanent 3. As fairly permanent -- subject to change

4. As somewhat tentative 5. Not applicable -- no "decision" yet.

5-72 Realistically considering the probabilities, how do you regard your career decision?

1. As very permanent 2. As permanent, as far as I can tell 3. As fairly permanent -- might change

4. As somewhat tentative 5. Not applicable -- no "decision" yet

5-78 Which of the following best describes your present career plans?

1. ( ) A very general idea about what you would like to do
2. ( ) A fairly general idea
3. ( ) A fairly specific idea
4. ( ) A specific plan worked out in some detail

5-31 Many parents take a great deal of interest in what their sons and daughters do. How important is it to you to satisfy your parents' wishes (circle one).

1. Not too important 2. Somewhat or slightly important 3. Fairly important

4. Quite important 5. Very important

What do the following people think of your career choice?
(Check applicable box.)

		More Disapproval than Approval	Indifferent	Approves Generally	Approves Highly	Item Not Applicable
5-32	Father	( )	( )	( )	( )	( )
5-33	Mother	( )	( )	( )	( )	( )
5-34	Wife	( )	( )	( )	( )	( )
5-73	Friends	( )	( )	( )	( )	( )

Very briefly describe the "career choice" you have had in mind in answering the fore-going eight questions.

5-38 Briefly describe your father's major occupation during the last ten years.

5-41 Describe your father's first major full-time employment.

5-43 What is the approximate amount of your parents' total income per year? If your father is not living or retired, please mention this and give an estimate of your parents' income just prior to his death or retirement. Also please mention any other circumstances which may make the figure you give not a good index of your family's financial status.

1-79 Are you committed to work for a specific company when you receive your degree? (Circle one.)

Yes No

If "yes" describe the circumstances briefly.

5-44 Which professional societies do you belong to? (If none, please state.)

5-46 Which professional journals do you subscribe to or read regularly, if any? (If none, please state. Please star (*) those which you subscribe to.)

5-48 With which professional groups do you feel your own interests and ambitions are most closely allied?

When and from what source did you first learn about GSIA?

What were your career plans at that time? If none, please state.

5-76 Check item which is most applicable.

I first considered attendance at GSIA because of:

1. ( ) Lack of interest in another career I was preparing for or pursuing previously.
2. ( ) Realization that I needed more preparation in previously chosen career.
3. ( ) Attraction to industrial management or research as new career possibility.
4. ( ) Other. (Please describe, using reverse side if necessary.)

This question concerns your typical behavior in the area of gambling or, in general, taking risks of any kind, e.g., betting on the outcome of races or athletic contests, gambling on being prepared for quizzes, shooting dice, gambling on the weather or "playing the stockmarket." How much do you gamble?

1-80 1. Never 2. Rarely 3. Occasionally 4. Frequently

Comments:

5-77 This question concerns the career plans you had just prior to the time you decided to attend GSIA.

Deciding to attend GSIA represents for me

1. (   ) A logical continuation of prior career plans
2. (   ) A slight modification of prior plans
3. (   ) A moderate change from prior plans
4. (   ) A drastic change
5. (   ) Item not applicable; prior to considering GSIA, I had no clear career plans.

5-78 Did you

1. (   ) Decide to do graduate work and subsequently learn about GSIA?
2. (   ) Learn about GSIA and subsequently decide to do graduate work here?
3. (   ) Other timing. (Please describe.)

5-79 At the end of your graduate work here, will you look for a position which is

1. (   ) Essentially the same as the position you formerly held or were preparing for?
2. (   ) Somewhat different?
3. (   ) Decidedly different?

If different (2 or 3 checked above) briefly note what the difference is. (Type of work? level of responsibility? setting?)

5-80 What are the chances of your deciding to "go on" to a Ph.D.?

1. ( ) No chance at all.
2. ( ) Some possibility.
3. ( ) Quite possible.
4. ( ) Highly possible.
5. ( ) Definite; I have planned to do so from the beginning.

If you checked 2, 3 or 4, what are the critical factors which will determine your decision?

How well do you think you did, relative to your capabilities, in your undergraduate work?

What factors are important in explaining your undergraduate performance?

If you could plan your undergraduate training again, would you attend the same school and take the same course that you did? If no, describe the type of school and type of course you would prefer; and explain your reasons for wanting a change.

How confident are you that you will be graduated from GSIA, i.e., that you will be able to satisfy the requirements of the degree you have in mind?

13-29 1. Fairly confident 2. Quite confident 3. Very confident

Very briefly describe to the best of your knowledge the characteristics which distinguish graduates of GSIA from the graduates of other similar graduate schools.

In your opinion, what other graduate schools offer training comparable to that offered at GSIA?

If you had not been admitted to GSIA, what would you have done?

It is recognized that not all of the required subjects offered at GSIA are equally pertinent to the needs of each member of the class. Which areas, if any, are least pertinent to your needs?

In what way will the courses taken at GSIA be relevant to your career plans? On this item, check each item which is applicable.

13-21 ( ) Difficult to say; depends on what I do later.
13-22 ( ) Will provide specific skills and knowledge I have found I needed.
13-23 ( ) Will provide specific skills and knowledge I expect to need.
13-24 ( ) Will provide general background knowledge.
13-25 ( ) Cannot say with certainty--not sufficiently familiar with curriculum.
13-26 ( ) Will enable me to discover my abilities.
13-27 ( ) Will enable me to discover my interests.

List the ages of your brothers and sisters. Your age_________
Ex.: "sister 20; brother, 22."

Indicate after each occupation listed below whether or not you would like that kind of work regardless of your present career plans. Put a circle around the appropriate letter. Secondly, check in the right hand column those occupations for which you think you have the necessary personal characteristics (assume that you could acquire the necessary formal training.)

	Like	Indifferent	Dislike	Don't know, Undecided	Could do
Architect	L	I	D	?	
Army Officer	L	I	D	?	
Artist	L	I	D	?	
Building Contractor	L	I	D	?	
CPA	L	I	D	?	
Chemist	L	I	D	?	
Civil Engineer	L	I	D	?	
Clergyman	L	I	D	?	
Consul	L	I	D	?	
Dentist	L	I	D	?	
Factory Manager	L	I	D	?	
Lawyer, Criminal	L	I	D	?	
Lawyer, Corporation	L	I	D	?	
Mathematician	L	I	D	?	
Musician	L	I	D	?	
Personnel Manager	L	I	D	?	
Physician	L	I	D	?	
Politician	L	I	D	?	
Salesmanager	L	I	D	?	
Surgeon	L	I	D	?	

What 3 things or activities in your life do you expect to give you the most satisfaction? (Please write 1 in space preceding the most important; 2 in space preceding next most important; 3 in space preceding third most important.)

Rank three:

Career or occupation
Family relationships
Leisure-time recreational activities
Religious beliefs or activities
Participation as citizen in affairs of your community
Participation in activities directed toward national or international betterment

Please rate each of the following job characteristics in terms of their importance to you, regardless of the specific job which you would like to have.

1.= Extremely important   2 = Very important   3 = Fairly important
4 = Not very important   5 = Not at all important

	Job Characteristics	Extremely Important				Not at all Important
a.	A stable, secure future	1	2	3	4	5
b.	Freedom from pressures to conform in my personal life	1	2	3	4	5
c.	An opportunity to use my special aptitudes and abilities	1	2	3	4	5
d.	An opportunity to be helpful to others	1	2	3	4	5
e.	An opportunity to be useful to society in general	1	2	3	4	5
f.	A chance to exercise leadership	1	2	3	4	5
g.	Social standing and prestige in my community	1	2	3	4	5
h.	Opportunity to be creative and original	1	2	3	4	5
i.	A chance to earn enough money to live comfortably	1	2	3	4	5
j.	Opportunities to work with people	1	2	3	4	5
k.	A chance to achieve recognition from others in my profession	1	2	3	4	5
l.	Freedom from supervision	1	2	3	4	5

Name________________________

Date________________________

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PERSONAL HISTORY QUESTIONNAIRE

Give as complete answers as you can to the following questions. Please try to elaborate on one-word answers that occur to you. If you need more space, use the back of the sheet, making sure that you number each item. Starting with the first question, answer each question in order.

1. People have many different reasons for their particular vocational plans. Discuss your recent thinking in regard to a career and outline in some detail how your thinking has developed since last September.

2. What do you realistically expect to do immediately upon completing your course-work here (or upon completing military service if you are temporarily entering the service after graduation)? If undecided, please describe the possibilities you are considering.

3a. Briefly describe whatever long-range career plans you may have. If undecided, please describe the different possibilities.

3b. If your plans are in any way tentative or indefinite, what events or experiences are likely to cause you to modify them or accept one alternative rather than another?

7. What specific persons have encouraged you to your recent career thinking? (If none, please state and if your plan includes alternatives, note which the person favored.)

8. What specific persons discouraged you? (If none, please state and note which part of your plans the person did not favor.)

9. What personal experiences influenced in any way your career thinking? (Describe the nature of the influence. If none, please state. If fully answered already, write "See above".)

11b. When a person makes a choice of a career or profession, he expects certain personal satisfactions. He weighs certain advantages and disadvantages. What are some of the advantages and disadvantages that you expect from the career you have in mind?

In the following questions, when you are asked to make a choice, check or circle only one answer. If none of the choices seems to fit you very well, check the one which most closely fits you. Write in any comments or qualifications that you care to make.

Which of the following best describes your career decision-making? (Check one.)

1-51 0. ( ) An extremely difficult process.
1. ( ) A very difficult process.
2. ( ) A rather difficult process.
3. ( ) A slightly difficult process.
4. ( ) An easy process. No difficulty.

Regardless of your present plans, how interested would you be in a career in each of the following work settings. (Check appropriate boxes.)

		0	1	2	3	4
		Definitely Not Interested	Not too Interested	Fairly	Quite	Highly
1-52	Large Business or Industry	☐	☐	☐	☐	☐
1-73	Small Business or Industry	☐	☐	☐	☐	☐
1-53	University or Research Inst.	☐	☐	☐	☐	☐
1-54	Govt. or Public Agencies	☐	☐	☐	☐	☐
1-55	Other (describe below)	☐	☐	☐	☐	☐

Similarly, please indicate how interested you would be in each of the following kinds of job responsibility.

		0	1	2	3	4
		Definitely Not Interested	Not too Interested	Fairly	Quite	Highly
1-57	Supervisory executive	☐	☐	☐	☐	☐
1-58	Advisory: Staff or consulting	☐	☐	☐	☐	☐
1-59	Applied or developmental research	☐	☐	☐	☐	☐
1-60	Fundamental research	☐	☐	☐	☐	☐
1-61	Teaching	☐	☐	☐	☐	☐
1-62	Sales or promotional work	☐	☐	☐	☐	☐

		0	1	2	3	4
		Definitely Not Interested	Not too Interested	Fairly	Quite	Highly
1-63	Employee or community relations	( )	( )	( )	( )	( )
1-74	Entrepreneurial, self-employed	( )	( )	( )	( )	( )
1-75	Engineering services	( )	( )	( )	( )	( )

1-68 What annual salary would you consider as an adequate income for your first position after graduation?

____

1-76 What chance do you think you have of being offered this salary? (Circle one.)

1. Very little 2. Fairly good 3. Good 4. Very good 5. A certainty

1-69 What annual salary would be adequate five or six years hence?

____

1-77 How much conscious career planning have you engaged in?

1. ( ) Very little. I cannot recall thinking about it much.
2. ( ) Some thought has been given from time to time.
3. ( ) Quite a bit of study and self-analysis.
4. ( ) Extensive study and self-analysis.
5. ( ) Continuous study and self-analysis.

5-29 Which of the following best describes how you first felt about your current career choice, i.e., at the time you made it, how did you feel about it? (Circle one.)

1. Decidedly uneasy 2. Somewhat uneasy 3. O.K.; some doubts, but no serious ones 4. No qualms whatsoever

5. No "choice" yet -- still deciding

5-71 How do you feel now about your current career choice?

1. Decidedly uneasy 2. Somewhat uneasy 3. O.K.; some doubts, but no serious ones 4. No qualms whatsoever

5. No "choice" yet --still deciding

5-30 How would you like to regard your career decision as it now stands?

1. As very permanent 2. As permanent 3. As fairly permanent--subject to change

4. As somewhat tentative 5. Not applicable--no "decision" yet

5-72 Realistically considering the probabilities, how do you regard your career decision?

1. As very permanent 2. As permanent, as far as I can tell 3. As fairly permanent--might change

4. As somewhat tentative 5. Not applicable--no "decision" yet

1-78 Which of the following best describes your present long-range (10 yrs.) plans?

1. ( ) A very general idea about what you would like to do.
2. ( ) A fairly general idea.
3. ( ) A fairly specific idea.
4. ( ) A specific plan worked out in some detail.

5-31 Many parents take a great deal of interest in what their sons and daughters do. How important is it to you to satisfy your parents' wishes? (Circle one.)

1. Not too important 2. Somewhat or slightly important

3. Fairly important 4. Quite important 5. Very important

What do the following people think of your career choice?

		More than Disapproval Approval	Indifferent	Approves Generally	Approves Highly	Item not Applicable
5-32	Father	( )	( )	( )	( )	( )
5-33	Mother	( )	( )	( )	( )	( )
5-34	Wife	( )	( )	( )	( )	( )
5-73	Friends	( )	( )	( )	( )	( )

Very briefly describe the "career choice" you have had in mind in answering the fore-going eight questions.

Indicate after each occupation listed below whether or not you would like that kind of work regardless of your present career plans. Put a circle around the appropriate letter. Secondly, check in the right hand column those occupations for which you think you have the necessary personal characteristics. (Assume that you could acquire the necessary formal training.)

	I				II
	Like	Indifferent	Dislike	Don't know, Undecided	Could do
Architect	L	I	D	?	
Army Officer	L	I	D	?	
Artist	L	I	D	?	
Building Contractor	L	I	D	?	
CPA	L	I	D	?	
Chemist	L	I	D	?	
Civil Engineer	L	I	D	?	
Clergyman	L	I	D	?	
Consul	L	I	D	?	
Dentist	L	I	D	?	
Factory Manager	L	I	D	?	
Lawyer, Criminal	L	I	D	?	
Lawyer, Corporation	L	I	D	?	
Mathematician	L	I	D	?	
Musician	L	I	D	?	
Personnel Manager	L	I	D	?	
Physician	L	I	D	?	
Politician	L	I	D	?	
Salesmanager	L	I	D	?	
Surgeon	L	I	D	?	

What three things or activities in your life do you expect to give you the most satisfaction? (Please write 1 in space preceding the most important; 2 in the space preceding the next most important; 3 in the space preceding third most important.)

Rank three:

Career or occupation
Family relationships
Leisure-time recreational activities
Religious beliefs or activities
Participation as citizen in affairs of your community
Participation in activities directed toward national or international betterment.

Please rate each of the following job characteristics in terms of their importance to you, regardless of the specific job which you would like to have.

1. Extremely important 2. Very important 3. Fairly important

4. Not very important 5. Not at all important

Job Characteristics	Extremely Important				Not at all Important
a. A stable, secure future	1	2	3	4	5
b. Freedom from pressures to conform in my personal life	1	2	3	4	5
c. An opportunity to use my special aptitudes and abilities	1	2	3	4	5
d. An opportunity to be helpful to others	1	2	3	4	5
e. An opportunity to be useful to society	1	2	3	4	5
f. A chance to exercise leadership	1	2	3	4	5
g. Social standing and prestige in my community	1	2	3	4	5
h. Opportunity to be creative and original	1	2	3	4	5
i. A chance to earn enough money to live comfortably	1	2	3	4	5
j. Opportunities to work with people	1	2	3	4	5
k. A chance to achieve recognition from others in my profession	1	2	3	4	5
l. Freedom from supervision	1	2	3	4	5

Appendix F

Results of the Personal History Questionnaires Given to the GSIA Class of 1963

(Phase II)

Appendix

Results of the Personal History Questionnaires Given to the GSIA Class of 1963

Not all questions of the PHQ appeared on both administrations of the test. For those questions given only on the first administration, there will only be one column of figures in the "Results" sections of this Appendix. These numbers will not be corrected for students who dropped out of school during the year.

For those questions given on both administrations, two columns of figures, headed 1st and 2nd will appear in the "Results" sections. In order to have the same number of Ss in both columns, a correction will be made for drop outs.

The number of drop outs were as follows:
Ph.D. - 2, M.S. - 7, Foreign - 7.

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Name ______________________

Date ______________________

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PERSONAL HISTORY QUESTIONNAIRE

Give as complete answers as you can to the following questions. Please try to elaborate on one-word answers that occur to you. If you need more space, use the back of the sheet, making sure that you number each item. Starting with the first question, answer each question in order.

1. People have many different reasons for their particular vocational plans. Discuss your early thinking in regard to a career and outline in some detail how your thinking has developed up to and including the present.

Code Category Sets:

1-1 Apparent perception of SIA training.

1. As means of acquiring knowledge and skills required by some occupational role. S plans to use skills in applied situation.
2. As education, i.e., S interested in IA or some part of content of curriculum and wants to study it. Satisfying curiosity or interests. May have no specific occupational role in mind. Code here unless evidence to put in 1 or 3.
3. As means of becoming manager, executive, administrator, or teacher as primary career goal. Area, setting, skills, knowledge, secondary.

9. Not ascertainable.

Results

	Foreign		*Ph.D.		*M.S.		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Skills	1	0	2	3	4	0	7	3
2. Interest	1	3	10	11	19	27	30	41
3. Goal	0	0	1	0	5	0	6	0
9. N.A.	1	0	3	2	1	2	5	4

1-2 Decisiveness of career decision(whatever decision may be).**

1. Evidence of passive choice i.e., no awareness of decision having been made, e.g., "I found myself.....", or no explicit mention of career planning or choice.

2. Evidence of awareness of choice or consideration of question. "It seemed best," or "I felt."

3. Explicit statement of definite active deliberate decision. "I decided on a career in industrial management." "I made a decision." "I choose...."

4. Explicit statement of strong decision. Consider any intensifying modifier as evidence. Ex. "I clearly decided" or "I made a firm decision."

8. Omitted.

Results

	Foreign		Ph.D.		M.S.		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Passive	0	1	6	2	5	5	11	8
2. Awareness	1	0	3	4	7	9	11	13
3. Definite	2	2	7	7	14	12	23	21
4. Strong	0	0	0	1	3	2	3	3
8. Omitted	0	0	0	2	0	1	0	3

1-4 Specificity of career plans

NOTE: On all scales measuring specificity we will consider two dimensions:

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* Defined on basis of stated interests on original application.

** Disregard statements of like and dislike and decisions regarding program of study.

Setting
- I. Broad area (industrial, educational, govt., etc.).
  - 1. General type of division, plant, institution or branch within I (clerical, airforce, business school).
    - a. Specific setting, department, bureau, service, etc.

Activity
- I. Broad occupational category (social psychology, electrical engineering, industrial administration, human engineering.
  - 1. General type or focus of work (sales, computer work, production management, operations analysis).
    - a. Specific occupational role (computer designer, production manager). No finer discrimination possible.

Code:

1. Setting and/or activity broad and other not mentioned.

2. Either setting or activity general.

3. Either setting or activity specific.

4. Both setting and activity specific.

8. Career not mentioned and cannot be inferred.

Results

	Foreign		Ph.D.		M.S.		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very broad	2	0	12	8	21	8	35	16
2. General	0	2	1	3	4	14	5	19
3. Fairly specific	1	1	2	0	3	5	6	6
4. Highly specific	0	0	0	2	1	1	1	3
8. Career not mentioned	0	0	1	3	0	1	1	4

1-5 Momentary self-concept regarding industrial administration (all questions).

1. Evidence that S sees himself now in field of industrial administration, even though as a student. Let "field of industrial administration" be defined fairly narrowly to include a group of specialists concerned with administration of organizations per se or research on real administrative problems, as opposed to engineers, psychologists, economists, etc. S may already have had experience in IA. Include teachers of IA.

2. Evidence that S sees himself outside the field of IA, but moving toward it.

3. Evidence that S sees himself as in non-IA role and remaining there. SIA training will, for example, make him a better, broader engineer.

Clue: If you stopped S on street and asked him what he is, what would he say?
Consider whether S has rejected career he prepared for as undergraduate.
If S flunked out what would he do?
Give priority to first mentioned career.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. In IA	7	2	23	27	3	2	33	31
2. Moving toward	4	3	6	1	0	1	10	5
3. Out permanently	4	9	0	0	0	0	4	9
8. No mention	1	2	0	1	0	0	1	3

1-6 Perception of career

1. Career seen primarily as means of dealing with a field of knowledge (economics, finance, psychology.*

2. Career seen as means of working in a particular setting (industry, university, etc.).

3. Career seen as means of performing certain general activity (administering, teaching, doing research, etc., dealing with people).

4. Career seen as means of achieving certain goal state (success, wealth, fame, prestige, security, rich rewards, etc.).

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. As knowledge	5	2	1	2	0	0	6	4
2. Setting	0	1	4	7	1	0	5	8
3. Activity	9	11	18	17	2	3	29	31
4. Means to goal	1	1	4	2	0	0	5	3
9. N.A.	1	1	2	1	0	0	3	2

---

* Give priority to attribute S cites first or emphasizes.

1-7 Main consideration or criteria for choosing a career (code first mentioned).

1. To meet interests, likes and dislikes.
2. To find one appropriate for S's particular abilities.
3. To satisfy some "other" or altruistic value orientation ("To make a contribution to the field").
4. Other criteria.
8. No mention of criteria.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Interests	9	8	11	12	2	1	22	21
2. Abilities	1	1	8	4	0	1	9	6
3. Altruism	1	1	2	0	0	0	3	1
4. Other	3	0	5	5	0	0	8	5
8. No mention	2	6	3	8	1	1	6	15

1-8 Barriers, hurdles, hinderances, hazards perceived between present position and career goal attainment.*

1. Ability and knowledge requirements "Will have to have ability."
2. Motivation, drive, or energic requirements.
3. Other.
8. No mention of any barriers but answer given.
9. N.A.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Ability	3	1	2	3	0	0	5	4
2. Drive	0	0	0	0	0	0	0	0
3. Other	1	3	3	0	0	0	4	3
8. None	11	10	24	25	3	3	38	38
9. N.A.	1	2	0	1	0	0	1	3

1-9 Immediate objective regarding first position.

1. To gain knowledge and experience. "To get hands dirty." Long-range goal may be different from short-range plans.
2. No discrimination between initial objectives and long-range objectives.
3. As first step in status hierarchy.

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* Regard "if" statements and other contingencies as awareness of barriers.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Experience	2	2	3	5	0	1	5	8
2. No discrim.	14	12	21	19	3	2	38	33
3. First step	0	0	5	4	0	0	5	4
9. N.A.	0	2	0	1	0	0	0	3

2. What do you realistically expect to do immediately upon completing your course-work here (or upon completing military service if you are temporarily entering the service after graduation)? If undecided, please describe the possibilities you are considering.

Coded Categories:

2-1 Realistic expectations*

1. Business or industrial; line, administration,supervisory, management.
2. Business; advisory, staff, service, research, and teaching.
3. Business; general or unspecified or self-employment.
4. Non-business; or non-industrial; line.
5. Non-business; staff.
6. Non-business; research or teaching.
7. Unspecified; research or teaching.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Bus. - line	2	1	15	15	1	0	18	16
2. Bus. - staff	3	2	6	10	1	2	10	14
3. Bus. -- gen.	1	1	6	2	1	0	8	3
4. Non.bus. - line	0	0	1	1	0	0	1	1
5. Non.bus. - staff	0	1	0	0	0	0	0	1
6. Non-bus. - res.	6	9	1	1	0	1	7	11
7. Unspec. - res.	4	2	0	0	0	0	4	2

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* Score first mentioned possibility. Use question 3 only to clarify ambiguities left by Q. 2. If inconsistency between 2 and 3 give priority to Q. 2. Unless otherwise noted, consider trainees as staff.

2-2 Specificity of expectations (see 1-4 for description of categories).

Results

	Ph. D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very broad	10	10	15	6	0	0	25	16
2. General	1	2	11	13	1	1	13	16
3. Fairly specific	4	2	2	10	2	2	8	14
4. Highly specific	1	2	1	0	0	0	2	2

2-3 Status plans*

1. No mention of eventual status.
2. Mention of working up or being promoted to a superior position or any comment indicating S is mindful of status.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. No mention	15	16	18	20	3	2	36	38
2. Status minded	1	0	11	9	0	1	12	10

2-4 Expected or preferred?

0. Job defined as one which S would like, but no explicit evidence that job expected.
1. Explicit mention that this job expected. Ex. "I expect to...." or "I will" or "I probably will...." or "I plan to...".

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Preferred	8	9	13	12	1	1	22	22
1. Expected	8	7	16	17	2	2	26	26

2-5 Alternativeness of immediate expectations.

0. Only one possibility described.
2. Two different possibilities ** described
3. Three or more different possibilities described.

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* Disregard vague possibilities mentioned.

** Originally there was a special category for alternatives which were similar but only two cases fell in this category and there was little agreement re similarity.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. None	10	10	17	15	2	1	29	26
2. Two	4	4	4	11	0	1	8	16
3. Three or more	2	2	8	3	1	1	11	6

3a. Briefly describe whatever long-range career plans you may have. If undecided, please describe the different possibilities.

Coded Categories:

3-1 Long-range objective.

(Same as "Realistic Expectation" code of 2-1 Q. 2)

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Bus. - line	1	1	15	15	1	1	17	17
2. Bus. - staff	5	0	3	6	1	0	9	6
3. Bus. - gen.	1	3	8	8	0	0	9	11
4. Non bus. - line	0	1	0	0	0	0	0	1
5. Non bus. - staff	0	0	0	0	0	0	0	0
6. Non bus. - res.	5	5	1	0	0	1	6	6
7. Unspec. - res.	2	3	1	0	0	0	3	3
8. Unclassified	2	3	1	0	1	1	4	4

3-2 Specificity of long-range career objective (same code as 1-4 and 2-2). See remark from 3-1.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very broad	13	8	21	2	1	1	35	11
2. General	1	5	4	14	0	0	5	19
3. Fairly specific	2	3	3	13	2	2	7	18
4. Highly specific	0	0	1	0	0	0	1	0

3-3 Instrumental activity mentioned?

1. No instrumental activity mentioned.
2. Some mention of some personal activity or exertion which will be instrumental to achieving long-range objective. Ex. "I plan to work my way up to.....".

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. No	12	12	2	19	3	2	38	33
2. Yes	4	4	6	10	0	1	10	15

3-5 Alternativeness of long-range objectives (same code as 2-5).

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Only one	7	6	16	12	2	0	25	18
2. Two	4	5	8	17	0	2	12	24
3. Three	3	2	4	0	0	0	7	2
8. No mention	2	3	1	0	1	1	4	4

3b. If your plans are in any way tentative or indefinite, what events or experiences are likely to cause you to modify them or accept one alternative rather than another?

Coded Categories:

3-6 Number of events or experiences mentioned.

0. Zero, not tentative
1. One event or experience mentioned
2. Two mentioned
3. Three or more
8. Unspecified

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. None	2	3	4	7	0	1	6	11
1. One	7	8	11	15	1	2	19	25
2. Two	4	3	10	3	0	0	14	6
3. Three	2	2	2	4	2	0	6	6
8. Unspec.	1	0	2	0	0	0	3	0

3-7 Event first mentioned or emphasized

1. Self (success, failure, ability, etc.).
2. Opportunity for a good or better job (more freedom, more money, improvement of any kind).
3. Changes in or consolidation of interests as a result of job or GSIA experience.
4. Family influence
5. Financial
6. Changes in world situation or present environment (economic recession, chance events, new techniques, etc.).
8. No answer or not tentative.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Self	5	6	6	3	0	1	11	10
2. Opportunity	2	3	0	6	1	1	3	10
3. Experience	3	3	12	9	1	0	16	12
4. Family	1	0	2	0	0	0	3	0
5. Financial	2	0	0	3	1	0	3	3
6. Environment	1	1	4	1	0	0	5	2
8. No answer	2	3	5	7	0	1	7	11

3-8 Mention of GSIA as an important influence

0. No mention
1. Yes, IA important

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No	7	10	19	24	3	3	29	37
1. Yes	9	6	10	5	0	0	19	11

4a. When did you first seriously consider the possibility of the career mentioned in 3?

Coded Categories:

4-1 When present career cnoice first considered*

1. Before high school (unless otherwise noted).
2. 5 to 8 years ago. During high school 1949-1952.
3. 3 to 4 years ago. During first two years of college. Early in college 1953-1954 (unless otherwise indicated).
4. 1 to 2 years ago. During last two years of college. 1955-56.
5. Since graduation from college.
8. No explicit mention of temporal relations, even though S may have plans at present.
9. N.A.

Results

	Ph.D.	M.S.	Foreign	Total
1. Before h.s.	0	1	0	1
2. During h.s.	1	2	1	4
3. Early col.	4	6	6	16
4. Late col.	6	17	0	23
5. Since grad.	6	7	3	16
8. No mention	1	2	0	3
9. N.A.	0	1	0	1

---

* Code for latest career choice even if not in field of IA. If response overlaps 2 categories, code in the later category.

4b. What study or work were you engaged in at the time?

4-2 Type of study or work

1. Industrial management course in college
2. Engineering or science course in college
3. IM job
4. E & S job
5. Other
8. No answer

Results

	Ph.D.	M.S.	Foreign	Total
1. IM course	3	4	1	7
2. ES course	6	14	2	22
3. IM job	1	5	3	9
4. ES job	2	5	0	7
5. Other	3	6	1	10
8. Omitted	3	3	3	9

5. When did you definitely decide upon this career? (If you have no plans or if you are still undecided, please state.)

Coded Categories:

5-1 When definite decision made.
Same code as in 4-1.

8. No definite decision (explicit statement) or item omitted but only if previous item answered.

Results

	Ph.D.	M.S.	Foreign	Total
1. Before h.s.	0	0	0	0
2. During h.s.	0	1	0	1
3. Early col.	0	0	0	0
4. Late col.	6	9	3	18
5. Since grad.	5	12	3	20
8. No dec.	7	14	4	25
9.	0	0	0	0

5-2 Decision Time

Post difference between 4-1 and 5-1. If 5-1 is 8, post 8. If either column is 9, post 9 unless 5-1 is 8.

Results

	Ph.D.	M.S.	Foreign	Total
0. Same year	5	12	0	17
1. One year later	5	8	3	16
2. Two years	1	2	3	6
8. No def. dec.	7	14	4	25
9. N.A.	0	0	0	0

6. What other professions or occupations did you consider seriously? For each, indicate the period in your life in which you considered it and the extent to which it is still a possibility. Examples: "Medicine, during high school, remote possibility now," or "Civil engineer, early in college, still a possibility."

Occupation	When	Present possibility

Coded Categories:

6-1 Number of other professions considered.*

0. None (explicit statement).
1. One other.
2. Two others.
3. Three or more.

Results

	Ph.D.	M.S.	Foreign	Total
0. None	0	1	1	2
1. One	2	5	3	10
2. Two	6	17	4	27
3. Three	10	13	2	25

6-3 Time of earliest career plans (same code as 4-1).

Results

	Ph.D.	M.S.	Foreign	Total
1. Before h.s.	5	3	1	9
2. During h.s.	12	27	6	45
3. Early col.	1	4	2	7
4. Late col.	0	0	0	0
5. Since grad.	0	0	0	0
9. N.A.	0	2	1	3

---

* Include all professions mentioned even if they are not considered possible at the present time.

6-4 Number still remotely possible.

Results

	Ph.D.	M.S.	Foreign	Total
0. None	6	5	2	13
1. One	7	14	5	26
2. Two	3	14	3	20
3. Three or more	2	3	0	5

7. What specific persons encouraged you in your career decisions? (If none, please state and if your plan includes alternatives, note which the person favored.)

Coded Categories:

7-1 Number of persons who encouraged S. (Count "parents", "several", or a group 2 unless persons within the group are explicitly mentioned).

Post number. Do not code as 0 unless "None" explicitly stated. If more than four, post 4.
8. Question left blank.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0.	2	5	7	16	1	2	10	23
1.	5	4	7	5	0	0	12	9
2.	2	2	7	4	1	0	10	6
3.	4	2	7	1	0	0	11	3
4.	3	3	1	3	1	1	5	7

7-2 Father specifically mentioned as encourager?

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No	15	14	21	25	3	3	39	42
1. Yes	1	2	8	4	0	0	9	6

7-4 Former employer specifically mentioned as encourager?

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No	14	15	25	27	2	3	41	45
1. Yes	2	1	4	2	1	0	7	3

7-5 Former teacher or professor? (Code any Dr.'s here unless information to the contrary).

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No	5	12	19	25	2	2	26	39
1. Yes	11	4	10	4	1	1	22	9

7-6 Parents, mother and father, "folks", etc.*

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No	14	11	26	28	1	2	41	41
1. Yes	2	5	3	1	2	1	7	7

---

* A set designed for "Mother" was dropped for lack of instances.

8. What specific persons discouraged you? (If none, please state and note which part of your plans the person did not favor.)

Coded Categories: *

8-1 No. of persons discouraging S. Code like Q. 7.

Treat as discourager any person named even if qualification or rationalization given by S. Two or more, code as 2.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. None	11	13	20	26	3	3	34	42
1. One	5	1	2	2	0	0	7	3
2. Two	0	2	7	1	0	0	7	3

---

* Several codes to pick up which persons discouraged S were dropped for lack of instances.

9. What personal experiences influenced in any way your career thinking? (Describe the nature of the influence. If none, please state. If fully answered already, write "see above.")

Coded Categories:

9-1 Nature of influences*

1. Aversive personal participation in other activities.
2. Personally rewarding, personal participation within field related to field of career.
3. Some experience not classifiable as either 1 or 2.
4. Something other than experience mentioned (Ex. interests, events).
8. None (Explicit statement).
9. N.A. or omitted.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Aversive	4	2	6	4	2	0	12	6
2. Rewarding	4	6	9	5	0	1	13	12
3. Other Exp.	2	1	7	6	0	2	9	9
4. Other	5	3	5	5	1	0	11	8
8. None	1	4	2	9	0	0	3	13

---

* Code first mentioned influence.

10. Briefly describe any long-range, permanent, occupational opportunities you may have had which you rejected. Examples: "Position as civil engineer offered when I received my B.S." or "Position in family firm."

Coded categories:

10-1 Number of offers rejected.

Results

	Ph.D.	M.S.	Foreign	Total
0. No offers	4	11	3	18
1. One	5	14	5	24
2. Two	6	8	1	15
3. Three or more	2	3	1	6
9. N.A.	1	0	0	1

10-2 Nature of opportunities (code first mentioned).

0. No offers.
1. Industrial management job.
2. Engineering and science job.
3. Military or government.
4. Self-employment or family business.
5. Other
9. N.A.

Results

	Ph.D.	M.S.	Foreign	Total
0. None	4	11	3	18
1. IM job	5	2	3	10
2. ES job	4	14	1	19
3. Govt.	3	1	0	4
4. Self-emp.	1	6	0	7
5. Other	0	1	3	4
9. N.A.	1	1	0	2

11a. We realize that it is very difficult to plan far into the future, but if everything goes as you hope it will, what kind of a job would you like to have five or six years from now?

Coded Categories:

11a-1 Amount of long-range (five year) planning.

1. Explicit statement that S hasn't thought much about it. (Even though some details of long-range plan given)
2. No explicit statement of no planning but also little evidence of planning. Vague, general details or several possibilities.
3. No explicit statement of no planning, and clear evidence of definite planning. Specific details of career wanted. Specific occupational title mentioned.
8. Question omitted.

Results

	Ph.D.	M.S.	Foreign	Total
1. None	0	5	1	6
2. Sketchy	9	22	6	37
3. Detailed	8	9	3	20
8. Omitted	1	0	0	1

11a-2 Nature of long-range career (same code as 2-1).

Results

	Ph.D.	M.S.	Foreign	Total
1. Bus. - line	1	18	1	20
2. Bus. - staff	5	3	3	11
3. Bur. - gen.	1	7	1	9
4. Non bus. - line	0	0	0	0
5. Non bus. - staff	0	1	0	1
6. Non bus. - res.	10	1	4	15
7. Unspec. - res.	0	1	0	1
8. Omitted - no plans	1	5	1	7

11b. When a person makes a choice of a career or profession he expects certain personal satisfactions. He weighs certain adadvantages and disadvantages. What are some of the advantages and disadvantages that you expect from the career you have in mind?

Coded Categories:

11b-1 Number of advantages listed. (Count each advantage listed separately by respondent even though in same category. "Listed separately" means in separate sentence or on separate line or numbered separately, or - if only one sentence - phrases within the sentences are considered separate.) Let 6 equal six or more.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. None	1	2	0	2	0	0	1	4
1. One	1	5	8	2	1	1	10	8
2. Two	3	2	6	7	1	1	10	10
3. Three	5	1	6	13	1	1	12	15
4. Four	3	5	6	4	0	0	9	9
5. Five	1	1	2	1	0	0	3	2
6. Six or more	2	0	1	0	0	0	3	0

11b-2 Number of disadvantages listed. (Let "4" equal four or more.)

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. None	3	6	3	6	1	1	7	13
1. One	8	6	12	15	1	1	21	22
2. Two	2	4	9	7	0	1	11	12
3. Three	2	0	2	1	1	0	5	1
4. Four	1	0	3	0	0	0	4	0

11b-3 Net advantage. (Number of advantages, as coded in 38-1, minus number of disadvantages - 38-2 - plus three. Let "7" - seven or more.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. One	0	0	1	0	0	0	1	0
2. Two	0	0	3	2	1	0	4	2
3. Three	3	6	7	4	0	0	10	10
4. Four	3	1	6	8	1	3	10	12
5. Five	3	5	9	10	1	0	13	15
6. Six	6	4	1	4	0	0	7	8
7. Seven	1	0	2	1	0	0	3	1

11b-4 Orientation of advantages.

1. Advantages or disadvantages pertain only to self.
2. A's and D's make specific mention of gains for family.
3. A's and D's make specific mention of gains for community, company and/or others.
4. A's and D's pertain only to others.
8. None listed

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Self	14	11	26	24	2	3	42	38
2. Family	0	0	0	3	0	0	0	3
3. Mix	1	3	3	1	1	0	5	4
4. Others	0	0	0	0	0	0	0	0
8. None	1	2	0	1	0	0	1	3

11b-5 through 11b-16 Opportunity scales.

If there is evidence that either the A. or D. listed bear on the opportunities the career provides, post number in appropriate column in accordance with the following code:

0. No mention
1. Presence of opportunity is mentioned as advantage.
2. Absence of opportunity seen as advantage.
3. Presence of opportunity is mentioned as a disadvantage.
4. Absence seen as disadvantage.

11b-5 Opportunity 1. Power, authority, control over others, decision-making, "responsibility" unspecified and "advancement" unspecified.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No mention	14	12	19	19	3	3	36	34
1. Present-adv.	2	2	8	8	0	0	10	10
2. Absent-adv.	0	0	0	0	0	0	0	0
3. Present-dis.	0	0	2	1	0	0	2	1
4. Absent-dis.	0	2	0	1	0	0	0	3

11b-6 Opportunity 2. Recognition, social rank, status, prestige, social achievement.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No mention	13	15	21	26	3	3	37	44
1. Present-adv.	3	1	6	3	0	0	9	4
2. Absent-adv.	0	0	0	0	0	0	0	0
3. Present-dis.	0	0	0	0	0	0	0	0
4, Absent-dis.	0	0	2	0	0	0	2	0

11b-7 Opportunity 3. To create, contribute, invent, achieve, accomplish. "Challenging job"

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No mention	4	9	14	13	2	0	20	22
1. Pres. adv.	12	6	12	15	1	3	25	24
2. Abs. adv.	0	0	0	0	0	0	0	0
3. Pres. dis.	0	0	1	0	0	0	1	0
4. Abs. dis.	0	1	2	1	0	0	2	2

11b-8 Opportunity 4. For autonomy, freedom to direct own life.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No mention	7	10	19	18	2	2	28	30
1. Pres. adv.	6	6	7	6	0	1	13	13
2. Abs. adv.	0	0	0	0	0	0	0	0
3. Pres. dis.	0	0	0	0	0	0	0	0
4. Abs. dis.	3	0	3	5	1	0	7	5

11b-9 Opportunity 5. For tranquility, freedom from harassment, freedom from pressure, security against failure, security-unspecified.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No ment.	12	12	11	14	1	2	24	28
1. Pres. adv.	0	2	2	1	0	0	2	3
2. Abs. adv.	0	0	0	0	0	0	0	0
3. Pres. dis.	2	0	0	0	0	0	2	0
4. Abs. dis.	2	2	16	14	2	1	20	17

11b-10 Opportunity 6. For pleasure, unspecified satisfactions, for enjoyment, variety, for affiliation with other people. "Interesting job."

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No ment.	5	7	10	10	0	1	15	18
1. Pres. adv.	11	8	17	17	3	1	31	26
2. Abs. adv.	0	0	0	0	0	0	0	0
3. Pres, dis,	0	0	0	0	0	0	0	0
4. Abs. dis.	0	1	2	2	0	1	2	4

11b-11 Opportunity 7. For growth, for personal development, for maturing.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. No ment.	11	13	27	28	3	2	41	43
1. Pres. adv.	5	3	2	1	0	1	7	5
2. Abs. adv.	0	0	0	0	0	0	0	0
3. Pres. dis.	0	0	0	0	0	0	0	0
4. Abs. dis.	0	0	0	0	0	0	0	0

11b-12 Opportunity 8. For financial rewards, financial security.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1 st	2nd
0. No ment.	6	11	16	13	2	3	24	27
1. Pres. adv.	2	1	8	15	1	0	11	16
2. Abs. adv.	0	0	0	0	0	0	0	0
3. Pres. dis.	0	0	0	1	0	0	0	1
4. Abs. dis.	8	4	5	0	0	0	13	4

11b-15 Most important opportunity. Post number of opportunity most frequently and/or most explicitly mentioned.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Power	0	0	3	1	0	0	3	1
2. Recognition	1	1	2	0	0	0	3	1
3. Achievement	5	2	7	6	0	2	12	10
4. Autonomy	2	3	3	3	0	0	5	6
5. Tranquility	0	2	6	3	0	0	6	5
6. Pleasure	6	6	6	9	3	1	15	16
7. Growth	1	0	1	0	0	0	2	0
8. Financial	0	0	1	6	0	0	1	6
9. Omitted	1	2	0	1	0	0	1	3

11b-16 Second most important opportunity. If only one opportunity mentioned, post "O".

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. None	2	3	2	3	1	1	5	7
1. Power	1	2	5	6	0	0	6	8
2. Recognition	0	0	1	2	0	0	1	2
3. Achievement	3	1	2	6	1	1	6	8
4. Autonomy	4	2	4	4	0	0	8	6
5. Tranquility	0	1	5	1	0	0	5	2
6. Pleasure	4	3	6	2	0	0	10	5
7. Growth	1	3	0	0	0	1	1	4
8. Financial	1	1	4	5	1	0	6	6

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Name ____________________

Date ____________________

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Part II

PERSONAL HISTORY QUESTIONNAIRE

In the following questions, when you are asked to make a choice, check or circle only one answer. If none of the choices seems to fit you very well, check the one which most closely fits you. Write in any comments or qualifications that you care to make.

Which of the following best describes your career decision-making? (Check one.)

1-15 0. ( ) An extremely difficult process.

1. ( ) A very difficult process.

2. ( ) A rather difficult process.

3. ( ) A slightly difficult process.

4. ( ) An easy process. No difficulty.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Ext. diff.	3	6	6	4	0	0	9	10
1. Very diff.	3	2	5	7	2	2	10	11
2. Rather diff.	6	4	10	11	0	0	16	15
3. Slight. diff.	3	2	6	6	1	0	10	8
4. Easy	1	2	2	1	0	1	3	4

Regardless of your present plans, how interested would you be in a career in each of the following work settings? (Check appropriate boxes.)

		0	1	2	3	4
		Definitely Not Interested	Not too Interested	Fairly	Quite	Highly
1-52	Large Business or Industry	( )	( )	( )	( )	( )
1-73	Small Business or Industry	( )	( )	( )	( )	( )
1-53	University or Research Inst.	( )	( )	( )	( )	( )
1-54	Govt. or Public Agencies	( )	( )	( )	( )	( )
1-55	Other (describe below)	( )	( )	( )	( )	( )

Coded Categories:

Post number assigned to degree of interest checked.
Post 8 if none of alternatives checked.

1-52 Interest in large business or industry.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	1	1	0	0	0	0	1	1
1. Not too	0	2	2	1	0	0	2	3
2. Fairly	7	6	7	5	0	0	14	11
3. Quite	6	3	8	14	1	1	15	18
4. Highly	2	3	12	9	2	2	16	14
8. Omitted	0	1	0	0	0	0	0	1

1-73 Interest in small business or industry.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	1	3	0	0	0	0	1	3
1. Not too	4	3	1	2	1	0	6	5
2. Fairly	6	5	8	7	0	1	14	13
3. Quite	4	2	10	10	2	2	16	14
4. Highly	1	2	10	10	0	0	11	12
8. Omitted	0	1	0	0	0	0	0	1

1-53 Interest in university of research institute.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	0	0	3	4	0	0	3	4
1. Not too	0	1	15	10	1	0	16	11
2. Fairly	0	2	6	13	1	2	7	17
3. Quite	5	3	3	2	1	0	9	5
4. Highly	11	9	2	0	0	1	13	10
8. Omitted	0	1	0	0	0	0	0	1

1-54 Interest in government or public agencies.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	0	1	3	8	0	0	3	9
1. Not too	6	6	16	12	1	1	23	19
2. Fairly	6	4	6	6	0	1	12	11
3. Quite	2	2	2	3	0	0	4	5
4. Highly	2	2	2	0	2	1	6	3
8. Omitted	0	1	0	0	0	0	0	1

1-55 Interest in other work settings.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	0	1	1	1	0	0	1	2
1. Not too	0	0	0	2	0	1	0	3
2. Fairly	2	1	4	1	0	0	6	2
3. Quite	3	1	0	1	0	0	3	2
4. Highly	0	2	5	6	1	0	6	8
8. Omitted	11	11	19	18	2	2	32	31

1-56 Highest setting interest.
Post code number of setting with check farthest to right.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Large bus.	0	2	16	13	1	2	17	17
2. Small bus.	0	1	7	8	0	0	7	9
3. Univ. or res.	7	4	2	0	0	0	9	4
4. Tie (1 or 2 with 3)	7	3	1	0	0	0	8	3
5. Govt. or public	0	1	2	0	0	0	2	1
6. Other ties	2	4	1	8	2	1	5	13
8. Omitted	0	1	0	0	0	0	0	0

Similarly please indicate how interested you would be in each of the following kinds of job responsibility.

	0	1	2	3	4
	Definitely Not Interested	Not too Interested	Fairly	Quite	Highly
1-57 Supervisory executive	( )	( )	( )	( )	( )
1-58 Advisory: Staff or consulting	( )	( )	( )	( )	( )
1-59 Applied or developmental research	( )	( )	( )	( )	( )
1-60 Fundamental research	( )	( )	( )	( )	( )
1-61 Teaching	( )	( )	( )	( )	( )
1-62 Sales or promotional work	( )	( )	( )	( )	( )
1-63 Employee or community relations	( )	( )	( )	( )	( )
1-74 Entrepreneurial, self-employed	( )	( )	( )	( )	( )
1-75 Engineering services	( )	( )	( )	( )	( )

Coded Categories:

1-57 Interest in supervisory-executive job.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	0	0	0	0	1	1	1	1
1. Not too	2	5	0	2	0	0	2	7
2. Fairly	3	0	4	1	0	0	7	1
3. Quite	6	3	9	9	1	1	16	13
4. Highly	5	7	16	17	1	1	22	25
8. Omitted	0	1	0	0	0	0	0	1

1-58 Interest in advisory: staff or consulting job.

Results

	Ph. D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	0	1	0	0	0	0	0	1
1. Not too	2	2	1	1	0	0	3	3
2. Fairly	1	2	9	5	0	0	10	7
3. Quite	10	5	9	13	1	2	20	20
4. Highly	3	5	10	10	2	1	15	16
8. Omitted	0	1	0	0	0	0	0	1

1-59 Interest in applied or developmental research.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	1	1	1	3	0	0	2	4
1. Not too	1	1	11	12	0	0	12	13
2. Fairly	2	6	10	8	2	2	14	16
3. Quite	7	4	6	6	0	0	13	10
4. Highby	5	3	1	0	1	1	7	4
8. Omitted	0	1	0	0	0	0	0	1

1-60 Interest in fundamental research.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	1	1	10	8	0	0	11	9
1. Not too	3	4	10	14	2	1	15	19
2. Fairly	3	6	4	4	0	1	7	11
3. Quite	3	1	3	3	1	1	7	5
4. Highly	6	3	2	0	0	0	8	3
8. Omitted	0	1	0	0	0	0	0	1

1-61 Interest in teaching.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	0	0	4	5	0	0	4	5
1. Not too	1	2	11	12	0	0	12	14
2. Fairly	0	1	10	11	2	2	12	14
3. Quite	5	3	3	1	1	1	9	5
4. Highly	10	9	1	0	0	0	11	9
8. Omitted	0	1	0	0	0	0	0	1

1-62 Interest in sales or promotional work.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	4	8	3	5	0	0	7	13
1. Not too	11	4	7	8	3	3	21	15
2. Fairly	1	3	9	9	0	0	10	12
3. Quite	0	0	6	5	0	0	6	5
4. Highly	0	0	4	2	0	0	4	2
8. Omitted	0	1	0	0	0	0	0	1

1-63 Interest in employee or community relations.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	1	1	3	2	0	1	4	4
1. Not too	8	6	9	14	2	1	19	21
2. Fairly	5	2	11	7	0	1	16	10
3. Quite	1	6	5	5	1	0	7	11
4. Highly	1	0	1	1	0	0	2	1
8. Omitted	0	1	0	0	0	0	0	1

1-74 Interest in entrepreneurial, self-employed work.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	1	2	0	0	1	0	2	2
1. Not too	5	6	3	7	1	1	9	14
2. Fairly	5	1	11	2	0	1	16	4
3. Quite	3	3	6	6	0	0	9	9
4. Highly	2	3	9	14	1	1	12	18
8. Omitted	0	1	0	0	0	0	0	1

1-75 Interest in engineering services.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
0. Def. not	6	4	3	5	1	0	10	9
1. Not too	6	6	11	11	0	1	17	18
2. Fairly	3	3	10	6	2	0	15	9
3. Quite	0	1	4	7	0	1	4	9
4. Highly	1	1	1	0	0	1	2	2
8. Omitted	0	1	0	0	0	0	0	1

1-64 Highest job interest. Treated like 1-56.

1. Supervisory, advisory, or tie with entrepreneurial.
2. Fundamental or applied research, or teaching.
3. Sales or public relations.
4. Entrepreneurial.
5. Engineering services.
6. Ties.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Supervisory	0	1	15	11	2	2	17	14
2. Res.-Teaching	6	6	2	0	0	0	8	6
3. Sales - P.R.	0	0	0	0	0	0	0	0
4. Entrepreneur.	0	1	1	3	0	0	1	4
5. Eng. Services	0	0	0	0	0	0	0	0
6. Ties	10	8	11	15	1	1	22	24

1-65 Highest setting-job interest.

1-56	1-64	Post
1 or 2 Bus.	1 Supr.	1
1 or 2 Bus.	2 Res.	2
1 or 2 Bus.	3, 6 Sales, etc.	3
3 Univ.	1	4
3 Univ.	2	5
3 Univ.	3, 6	6
4, 6 ties	1,2,3,4,6	7
If either is omitted		8

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Bus. - Supr.	0	1	14	10	1	2	15	13
2. Bus. - Res.	0	0	0	0	0	0	0	0
3. Bus. - etc.	0	1	9	10	0	0	9	11
4. Univ. - Supr.	0	0	0	0	0	0	0	0
5. Univ. - Res.	5	5	2	0	0	0	7	5
6. Univ. - etc.	2	2	0	0	0	0	2	2
7. Ties	9	6	4	9	2	1	15	16
8. Omitted	0	1	0	0	0	0	0	1

1-46 Describe any city, community, or geographical location in which you would like to work in your first position. If no preference, please state.

Coded Categories:

1-46 Specificity of geographical location preferred.

1. Haven't thought much about it. (Code here even if preference indicated later) or "wherever my work is located," or "no preference."
2. One general attribute mentioned (city in West).
3. Two general attributes or specific location.

Results

	Ph.D.	M.S.	Foreign	Total
1. None	9	20	3	32
2. Some	6	10	6	22
3. High	3	6	1	10

1-68 What annual salary would you consider as an adequate income for your first position after graduation? __________________

Coded Categories

1-68 Adequate Starting Salary
Post*

$5499 or less	1
$5500 to 6499	2
$6500 to 7499	3
$7500 to 8499	4
$8500 to 9499	5
$9500 to 10,499	6
$10,500 or more	7
Item omitted	8
Not ascertainable or applicable (answer given in foreign exchange.	9

Results

	Ph.D		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. To $5500	0	0	0	0	1	0	1	0
2. To $6500	1	0	1	0	0	1	2	1
3. To $7500	2	3	5	5	0	0	7	8
4. To $8500	5	6	12	9	1	0	18	15
5. To $9500	2	3	5	8	0	0	7	11
6. To $10,500	3	3	4	5	0	0	7	8
7. More	2	0	1	2	0	1	3	3
8. Omitted	0	1	1	0	1	1	2	2
9. N.A.	1	0	0	0	0	0	1	0

1-76 What chance do you think you have of being offered this salary? (Circle one.)

1. Very little 2. Fairly good 3. Good 4. Very good 5. A certainty

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very little	1	0	0	0	0	0	1	0
2. Fairly good	3	1	3	6	0	1	6	8
3. Good	4	4	10	7	1	1	15	12
4. Very good	8	9	14	13	0	0	22	22
5. A certainty	0	1	1	3	1	0	2	4
9. N.A.	0	1	1	0	1	1	2	2

---

* If range is given, post answer in most overlapping category or category in which mean of range given would fall. If salaries for two positions are given, post salaries for position subject "expects to have" according to Q. 2.

1-69 What annual salary would be adequate five or six years hence? ________

Coded Categories:

1-69 Adequate salary five years hence.
Use same code as for Q. 13.

If salaries for 2 positions given code for position mentioned first in Q. 3.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. To $5500	0	0	0	0	1	0	1	0
2. To $6500	0	0	0	0	0	0	0	0
3. To $7500	0	0	0	0	0	0	0	0
4. To $8500	2	0	1	0	0	0	3	0
5. To $9500	1	2	2	0	0	0	3	2
6. To $10,500	0	3	5	1	0	0	5	4
7. More	8	10	18	27	1	2	27	39
9. N.A.	5	1	3	1	1	1	9	3

1-70 Salary increase in first five years.

Subtract answer given to Q. 15 from that of Q. 16. If range given use mean of range.

Difference	Post
1,499 or less	1
1,500 to 1,999	2
2,000 to 2,499	3
2,500 to 2,999	4
3,000 to 3,499	5
3,500 to 3,999	6
4,000 or more	7
one or both items omitted	8
not ascertainable	9

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. To $1,500	1	1	1	0	1	0	3	1
2. To $1,750	1	1	2	0	0	0	3	1
3. To $2,250	0	2	3	0	0	0	3	2
4. To $2,750	0	0	0	0	0	0	0	0
5. To $3,250	3	2	1	1	0	0	4	3
6. To $3,750	0	1	7	3	0	0	7	4
7. More	6	8	12	24	1	2	19	34
8. Omitted	4	1	3	1	1	1	8	3
9. N.A.	1	0	0	0	0	0	1	0

5-24. In what other professions or occupations, if any, do you feel you would find satisfactions similar to those of the career you have in mind? (If none, please state.)

Coded Categories:

5-24. Number of other professions providing similar satisfactions.

0. None (explicit statement).
1. One other.
2. Two other or several.
3. Three or more other.
8. Don't know.

Count each profession listed even though very similar and even though answered qualified. Do count possibilities mentioned.

Results

	Ph.D.	M.S.	Foreign	Total
0. None	5	10	2	17
1. One	7	11	4	22
2. Two	2	11	0	13
3. More	2	2	2	6
8. ?	2	2	2	6

5-26 Group classification of first mentioned occupation providing similar satisfactions.

0. No other profession similarly satisfying.
9. Don't know.

Results

	Ph.D.	M.S.	Foreign	Total
0. None	5	11	2	18
1. Service	2	2	0	4
2. Bus. Contact	1	2	0	3
3. Organization	3	4	0	7
4. Technology	1	3	3	7
5. Outdoor	0	1	2	3
6. Science	4	4	1	9
7. Gen. Cult.	0	3	0	3
8. Arts	0	4	0	4
9. ?	2	2	2	6

5-27 What are the satisfactions which would be similar?

Coded Categories:

5-27 Satisfactions which would be similar. (Code first mentioned or majority).

1. Extrinsic rewards would be similar (Salary, security, etc.)
2. Intrinsic rewards would be the same.
8. "none" on Q. 19.

Extrinsic rewards:	Reward follows performance. Could conceivably be obtained without enacting specific role at all.
Intrinsic rewards:	Obtained only from actually enacting role. Reward accompanies performance.

Results

	Ph.D.	M.S.	Foreign	Total
1. Extrinsic	3	7	0	10
2. Intrinsic	7	15	6	28
8. "None" (Q. 19)	8	14	4	26

5-28 Reasons for not entering occupations listed in 5-24.

1. Interests and needs
2. Less freedom or independence
3. Lack of ability, education, or opportunity
4. Lower salary
5. Less direct goal attainment
6. Other
8. Omitted or undecided

Results

	Ph.D.	M.S.	Foreign	Total
1. Interests	4	4	2	10
2. Freedom	2	2	0	4
3. Ability	2	8	0	10
4. Salary	0	2	1	3
5. Goals	1	0	1	2
6. Other	0	3	0	3
8. Omitted	9	17	6	32

-6

1-77 How much conscious career planning have you engaged in?

1. ( ) Very little. I cannot recall thinking about it much.
2. ( ) Some thought has been given from time to time.
3. ( ) Quite a bit of study and self-analysis.
4. ( ) Extensive study and self-analysis.
5. ( ) Continuous study and self-analysis.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Little	0	0	0	1	0	0	0	1
2. Some	1	0	2	2	0	0	3	2
3. Quite a bit	4	4	9	11	2	2	15	17
4. Extensive	3	4	11	10	1	0	15	14
5. Continuous	8	8	7	5	0	1	15	14

5-29 Which of the following best describes how you first felt about your current career choice, i.e., at the time you made it, how did you feel about it? (Circle one.)

1. Decidedly uneasy
2. Somewhat uneasy
3. O.K.; some doubts, but no serious ones
4. No qualms whatsoever
5. No "choice" yet--still deciding

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Dec. uneasy	1	1	1	1	0	0	2	2
2. Some uneasy	2	2	7	4	1	1	10	7
3. O.K.	8	6	9	16	0	1	17	23
4. No qualms	0	2	8	2	1	1	9	5
5. Undecided	5	4	4	6	1	0	10	10
8. Omitted	0	1	0	0	0	0	0	1

5-71 How do you feel now about your current career choice?

1. Decidedly uneasy
2. Somewhat uneasy
3. O.K.; some doubts but no serious ones
4. No qualms whatsoever
5. No "choice" yet--still deciding

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Dec. uneasy	0	1	0	0	0	0	0	1
2. Some uneasy	2	1	4	4	1	1	7	6
3. O.K.	6	7	10	14	0	0	16	21
4. No qualms	3	2	10	5	1	2	14	9
5. Undecided	5	4	5	6	1	0	11	10
8. Omitted	0	1	0	0	0	0	0	1

5-30 How would you __like to__ regard your career decision as it now stands?

1. As very permanent 2. As permanent 3. As fairly permanent--subject to change

4. As somewhat tentative 5. Not applicable--no "decision" yet.

__Results__

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very perm.	3	3	3	1	0	0	6	4
2. Permanent	1	2	4	7	0	0	5	9
3. Fairly perm.	6	4	13	11	1	2	20	17
4. Tentative	1	3	5	6	1	1	7	10
5. No decision	5	3	4	4	1	0	10	7
8. Omitted	0	1	0	0	0	0	0	1

5-72 __Realistically considering the probabilities__, how do you regard your career decision?

1. As very permanent 2. As permanent, as far as I can tell 3. As fairly permanent—might change

4. As somewhat tentative 5. Not applicable--no "decision" yet.

__Results__

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very perm.	1	0	1	1	0	0	2	1
2. Permanent	5	3	8	8	0	0	13	11
3. Fairly perm.	4	7	9	9	2	3	15	19
4. Tentative	1	2	7	6	0	0	8	8
5. No decision	5	3	4	5	1	0	10	8
8. Omitted	0	1	0	0	0	0	0	1

1-78 Which of the following best describes your present career plans?

1. ( ) A very general idea about what you would like to do.
2. ( ) A fairly general idea.
3. ( ) A fairly specific idea.
4. ( ) A specific plan worked out in some detail.

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Very gen.	5	3	6	7	1	0	12	10
2. Fairly gen.	3	5	15	13	1	3	19	21
3. Fairly spec.	5	8	8	9	1	0	14	17
4. Specific	3	0	0	0	0	0	3	0

5-31 Many parents take a great deal of interest in what their sons and daughters do. How important is it to you to satisfy your parents' wishes (circle one)?

1. Not too important 2. Somewhat or slightly important 3. Fairly important
4. Quite important 5. Very important

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. Not too	3	4	9	6	0	0	12	10
2. Somewhat	5	3	8	13	0	0	13	16
3. Fairly	4	4	8	6	2	2	14	12
4. Quite	1	4	1	4	0	1	2	9
5. Very	3	1	3	0	1	0	7	1

What do the following people think of your career choice? (Check applicable box.)

		More Disapproval than Approval	Indifferent	Approves Generally	Approves Highly	Item Not Applicable
5-32	Father	( )	( )	( )	( )	( )
5-33	Mother	( )	( )	( )	( )	( )
5-34	Wife	( )	( )	( )	( )	( )
5-73	Friends	( )	( )	( )	( )	( )

5-32 Opinion of father

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. More disap.	0	0	0	0	0	0	0	0
2. Indifferent	0	1	3	0	0	0	3	1
3. Gen. appr.	7	4	8	15	0	1	15	20
4. High appr.	6	6	14	13	2	2	22	21
5. Not appl.	3	5	4	1	1	0	8	6

5-33 Opinion of mother

Results

	Ph.D.		M.S.		Foreign		Total	
1. More disap.	0	0	0	0	0	0	0	0
2. Indifferent	0	1	3	3	0	0	3	4
3. Gen. appr.	6	2	9	13	1	1	16	16
4. High appr.	7	8	13	10	2	2	22	20
5. Not appl.	3	5	4	3	0	0	7	8

5-34 Opinion of wife

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. More disap.	0	0	0	0	0	0	0	0
2. Indifferent	0	0	1	0	0	0	1	0
3. Gen. appr.	1	3	4	6	0	0	5	9
4. High appr.	8	7	6	12	0	0	14	19
5. Not appl.	7	6	18	11	3	3	28	20

5-73 Opinion of friends

Results

	Ph.D.		M.S.		Foreign		Total	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
1. More disap.	0	1	1	1	0	0	1	2
2. Indifferent	1	1	3	2	1	0	5	3
3. Gen. appr.	6	5	8	12	1	3	15	20
4. High appr.	6	5	11	10	1	0	18	15
5. Not appl.	3	4	6	4	0	0	9	8

5-43 What is the approximate amount of your parents' total income per year? If your father is not living or retired, please mention this and give an estimate of your parents' income just prior to his death or retirement. Also please mention any other circumstances which may make the figure you give not a good index of your family's financial status.

Coded Categories:

5-43 Parent's total income

0. Less than $3,999
1. $4,000 to 5,999
2. $6,000 to 7,999
3. $8,000 to 9,999
4. $10,000 to 11,999
5. $12,000 to 13,999
6. $14,000 to 15,999
7. Over $16,000
8. Figure given not applicable since father retired or dead, or "I don't know"

Results

	Ph. D.	M.S.	Foreign	Total
0. To $4,000	0	2	0	2
1. To $6,000	0	3	0	3
2. To $8,000	6	3	0	9
3. To $10,000	5	6	1	12
4. To $12,000	2	3	1	6
5. To $14,000	2	2	0	4
6. To $16,000	0	4	0	4
7. More	1	10	4	15
8. ?	2	3	4	9

5-44 Which professional societies do you belong to? (If none, please state.)

Coded Categories:

5-44 Number of societies listed. Post number.

Post number
3 - three or more

Results

	Ph.D.	M.S.	Foreign	Total
0. None	13	18	7	38
1. One	3	12	3	18
2. Two	2	3	0	5
3. Three	0	3	0	3

5-46 Which professional journals do you subscribe to or read regularly, if any? (If none, please state. Please star (*) those which you subscribe to.)

Coded Categories:

5-46 Number of journals listed. Do not count general news magazines.

Code 0, 1, 2, etc. Same counting rules as other items.
4 = four or more.

Results

	Ph.D.	M. S.	Foreign	Total
0. None	11	22	3	36
1. One	2	6	3	11
2. Two	4	5	2	11
3. Three	1	2	0	3
4. Four	0	1	2	3

5-82 Number of journals subscribed to Code only those which S has been starred.

Results

0. None	13	27	7	48
1. One	3	4	0	7
2. Two	2	4	0	8
3. Three	0	1	0	1

5-76 Check item which is most applicable.

I first considered attendance at GSIA because of:

1. ( ) Lack of interest in another career I was preparing for or pursuing previously.
2. ( ) Realization that I needed more preparation in previously chosen career.
3. ( ) Attraction to industrial management or research as new career possibility.
4. ( ) Other. (Please describe, using reverse side if necessary.)

Results

	Ph.D.	M.S.	Foreign	Total
1. Negative interest	1	2	0	3
2. Need of preparation	9	17	4	30
3. IM as new career	5	12	5	22
4. Other	3	5	1	9

This question concerns your typical behavior in the area of gambling or in general, taking risks of any kind, e.g., betting on the outcome of races or athletic contests, gambling on being prepared for quizzes, shooting dice, gambling on the weather or "playing the stockmarket." How much do you gamble?

1-80 1. Never 2. Rarely 3. Occasionally 4. Frequently

Comments:

Results

	Ph.D.	M.S.	Foreign	Total
1. Never	2	2	1	5
2. Rarely	10	13	5	28
3. Occasionally	5	15	3	23
4. Frequently	1	6	1	8

5-77 This question concerns the career plans you had just prior to the time you decided to attend GSIA.

Deciding to attend GSIA represents for me

1. ( ) a logical continuation of prior career plans

2. ( ) a slight modification of prior plans

3. ( ) a moderate change from prior plans

4. ( ) a drastic change

5. ( ) Item not applicable; prior to considering GSIA, I had no clear career plans.

Results

	Ph.D.	M. S.	Foreign	Total
1. Continuation	11	19	6	36
2. Slight modif.	1	4	2	7
3. Moderate change	3	5	0	8
4. Drastic change	0	3	1	4
5. Not appl.	3	5	1	9

5-78 Did you

1. ( ) decide to do graduate work and subsequently learn about GSIA?

2. ( ) learn about GSIA and subsequently decide to do graduate work here?

3. ( ) Other timing. (Please describe.)

Results

	Ph.D.	M. S.	Foreign	Total
1. Grad. work first	14	21	6	41
2. GSIA first	2	8	2	12
3. Other	2	7	2	11

5-79 At the end of your graduate work here, will you look for a position which is

1. ( ) essentially the same as the position you formerly held or were preparing for

2. ( ) somewhat different

3. ( ) decidedly different

If different, (2 or 3 checked above) briefly note what the difference is. (Type of work? level of responsibility? setting?)

Results

	Ph.D.	M. S.	Foreign	Total
1. Same	8	9	6	23
2. Some diff.	3	10	2	15
3. Very diff.	6	12	2	20
8. Omitted	1	5	0	6

5-80 What are the chances of your deciding to "go on" to a Ph.D.?

1. ( ) No chance at all.

2. ( ) Some possibility.

3. ( ) Quite possible.

4. ( ) Highly possible

5. ( ) Definite; I have planned to do so from the beginning.

Results

	Ph.D.	M. S.	Foreign	Total
1. No chance	0	10	1	11
2. Some pos.	0	17	1	18
3. Quite pos.	1	6	4	11
4. Highly pos.	5	2	1	8
5. Definite	12	1	3	16

5-81 How well do you think you did, relative to your capabilities, in your undergraduate work?

Results

	Ph.D.	M. S.	Foreign	Total
1. Excellent	1	3	3	7
2. Above average	1	5	4	10
3. Average	7	16	3	26
4. Below average	9	12	0	21

13-29 How confident are you that you will be graduated from GSIA, i.e., that you will be able to satisfy the requirements of the degree you have in mind?

1. Fairly confident 2. Quite confident 3. Very confident

Results

	Ph.D.	M.S.	Foreign	Total
1. Fairly	9	12	3	24
2. Quite	8	11	3	22
3. Very	1	13	4	18

In what way will the courses taken at GSIA be relevant to your career plans? On this item, check each item which is applicable.

13-21 ( ) Difficult to say; depends on what I do later.

13-22 ( ) Will provide specific skills and knowledge I have found I needed.

13-23 ( ) Will provide specific skills and knowledge I expect to need.

13-24 ( ) Will provide general background knowledge.

13-25 ( ) Can not say with certainty--not sufficiently familiar with curriculum.

13-26 ( ) Will enable me to discover my abilities.

13-27 ( ) Will enable me to discover my interests.

Results

Count number of checks for each item.

	Ph.D	M.S.	Foreign	Total
13-21	3	5	0	8
13-22	8	8	4	20
13-23	15	19	4	38
13-24	17	29	8	54
13-25	3	3	0	6
13-26	7	15	0	22
13-27	7	17	1	25

GENERAL CODING INSTRUCTIONS

1. When more than one question may provide the information for a response, pool all the information available. If conflicting, give priority to the response of the more open-ended question provided that it is clear that the spontaneous response is relevant, i.e., it must be clear that the respondent had the same question in mind.

2. In general, row 9 will be used when correct coding is not-ascertainable (N.A.) either because the response is illegible, omitted, or because an accurate code category is not provided. For certain sets of categories however, special categories are provided to indicate that the item is omitted; watch for these.

3. If no logical grounds for assigning a response to one of two or more categories, code 9 unless specific instructions to the contrary are given.

Appendix G

Ten Statements Test

Code No. ________________ Date _______________ Interview No. ______

On this sheet are 10 numbered lines. You are to write the first 10 things about yourself that come to mind. You need not put your answers in the form of complete sentences. Don't worry about the order of items or about how important they seem. Just write the first 10 things you think of in answer to the question "WHO AM I?". You will have 10 minutes.

1. ____

2. ____

3. ____

4. ____

5. ____

6. ____

7. ____

8. ____

9. ____

10. ____

Mark II
TLH
6 Dec 60

(Semantic differential test)

INSTRUCTIONS

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In taking this test, please make your judgments on the basis of what these things mean to *you*. In each section of this test you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales:

If you feel that the concept is *very closely related* to one end of the scale beneath it, you should place your check-mark as follows:

fair X ___ ___ ___ ___ ___ ___ unfair

or

fair ___ ___ ___ ___ ___ ___ X unfair

If you feel that the concept is *quite closely related* to one or the other end of the scale (but not extremely) you should place your check-mark as follows:

strong ___ X ___ ___ ___ ___ ___ weak

or

strong ___ ___ ___ ___ ___ X ___ weak

If the concept seems *only slightly related* to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active ___ ___ X ___ ___ ___ ___ passive

or

active ___ ___ ___ ___ X ___ ___ passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the concept to be *neutral* on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your check-mark in the middle space:

safe ___ ___ ___ X ___ ___ ___ dangerous

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries.

this: X ___ not this: ___X___

(2) Be sure you check every scale for every concept - do not omit any.

(3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the test. *Make each item a separate and independent judgment*. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

(Semantic differential, sample concept page)

MONEY

SOFT ___ ___ ___ ___ ___ ___ ___ HARD

REPUTABLE ___ ___ ___ ___ ___ ___ ___ DISREPUTABLE

COMPLEX ___ ___ ___ ___ ___ ___ ___ SIMPLE

SPACIOUS ___ ___ ___ ___ ___ ___ ___ CONSTRICTED

UNIMPORTANT ___ ___ ___ ___ ___ ___ ___ IMPORTANT

ACTIVE ___ ___ ___ ___ ___ ___ ___ PASSIVE

BAD ___ ___ ___ ___ ___ ___ ___ GOOD

SATISFYING ___ ___ ___ ___ ___ ___ ___ UNSATISFYING

OPAQUE ___ ___ ___ ___ ___ ___ ___ TRANSPARENT

INTERESTING ___ ___ ___ ___ ___ ___ ___ BORING

Job Characteristic Test

Code No. ________ Date ____________________ Interview No. ________

What 3 things or activities in your life do you expect to give you the most satisfaction? (Please write 1 in space preceding the most important; 2 in space preceding next most important; 3 in space preceding third most important).

Rank three:
- Career or occupation
- Family relationships
- Leisure-time recreational activities
- Religious beliefs or activities
- Participation as citizen in affairs of your community
- Participation in activities directed toward national or international betterment

Please rate each of the following job characteristics in terms of their importance to you, regardless of the specific job which you would like to have.

1 = Extremely important 2 = Very important 3 = Fairly important
4 = Not very important 5 = Not at all important

	Job Characteristics	Extremely Important				Not at all Important
a.	A stable, secure future	1	2	3	4	5
b.	Freedom from pressures to conform in my personal life	1	2	3	4	5
c.	An opportunity to use my special aptitudes and abilities	1	2	3	4	5
d.	An opportunity to be helpful to others	1	2	3	4	5
e.	An opportunity to be useful to society in general	1	2	3	4	5
f.	A chance to exercise leadership	1	2	3	4	5
g.	Social standing and prestige in my community	1	2	3	4	5
h.	Opportunity to be creative and original	1	2	3	4	5
i.	A chance to earn enough money to live comfortably	1	2	3	4	5
j.	Opportunities to work with people	1	2	3	4	5
k.	A chance to achieve recognition from others in my profession	1	2	3	4	5
l.	Freedom from supervision	1	2	3	4	5

Mark II
TLH
6 Dec 60

____
Last name First name

SELF-DESCRIPTION INVENTORY

The purpose of this inventory is to obtain a picture of the traits you believe you possess and to see how you describe yourself. There are no right or wrong answers, so try to describe yourself as accurately and honestly as you can. You are to check (√) one word in each of the following pairs.

In each of the pairs of words below check the one you think *most* describes you.

1. ____capable
____discreet

2. ____understanding
____thorough

3. ____cooperative
____inventive

4. ____friendly
____cheerful

5. ____energetic
____ambitious

6. ____persevering
____independent

7. ____loyal
____dependable

8. ____determined
____courageous

9. ____industrious
____practical

10. ____planful
____resourceful

11. ____unaffected
____alert

12. ____sharp-witted
____deliberate

13. ____kind
____jolly

14. ____efficient
____clear-thinking

15. ____realistic
____tactful

16. ____enterprising
____intelligent

17. ____affectionate
____frank

18. ____progressive
____thrifty

19. ____sincere
____calm

20. ____thoughtful
____fair-minded

21. ____poised
____ingenious

22. ____sociable
____steady

23. ____appreciative
____good-natured

24. ____pleasant
____modest

25. ____responsible
____reliable

26. ____dignified
____civilized

27. ____imaginative
____self-controlled

28. ____conscientious
____quick

29. ____logical
____adaptable

30. ____sympathetic
____patient

31. ____stable
____foresighted

32. ____honest
____generous

In each of the pairs of words below check the one you think *least* describes you.

33. ____shy
____lazy

34. ____unambitious
____reckless

35. ____noisy
____arrogant

36. ____emotional
____headstrong

37 ____immature
____quarrelsome

38. ____unfriendly
____self-seeking

39. ____affected
____moody

40. ____stubborn
____cold

41. ____conceited
____infantile

42. ____shallow
____stingy

43. ____unstable
____frivolous

44. ____defensive
____touchy

45. ____tense
____irritable

46. ____dreamy
____dependent

47. ____changeable
____prudish

48. ____nervous
____intolerant

49. ____careless
____foolish

50. ____apathetic
____egotistical

51. ____despondent
____evasive

52. ____distractible
____complaining

53. ____weak
____selfish

54. ____rude
____self-centered

55. ____rattle-brained
____disorderly

56. ____fussy
____submissive

57. ____opinionated
____pessimistic

58. ____shiftless
____bitter

59. ____hard-hearted
____self-pitying

60. ____cynical
____aggressive

61. ____dissatisfied
____outspoken

62. ____undependable
____resentful

63. ____sly
____excitable

64. ____irresponsible
____impatient

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